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Journal of Electricity and Western Industry

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January 1, 1922

San Francisco

California's Developed Water Power Now Exceeds A Million Horse Power

THE Caribou Development of the Great Western Power Company of San Francisco which has just begun operation puts California well ahead of one million developed horse power.

This is the eighth plant designed and built by Stone & Webster for the power companies of the Pacific Coast.

Its water wheels are the largest of their type yet built.

STONE & WEBSTER

INCORPORATED

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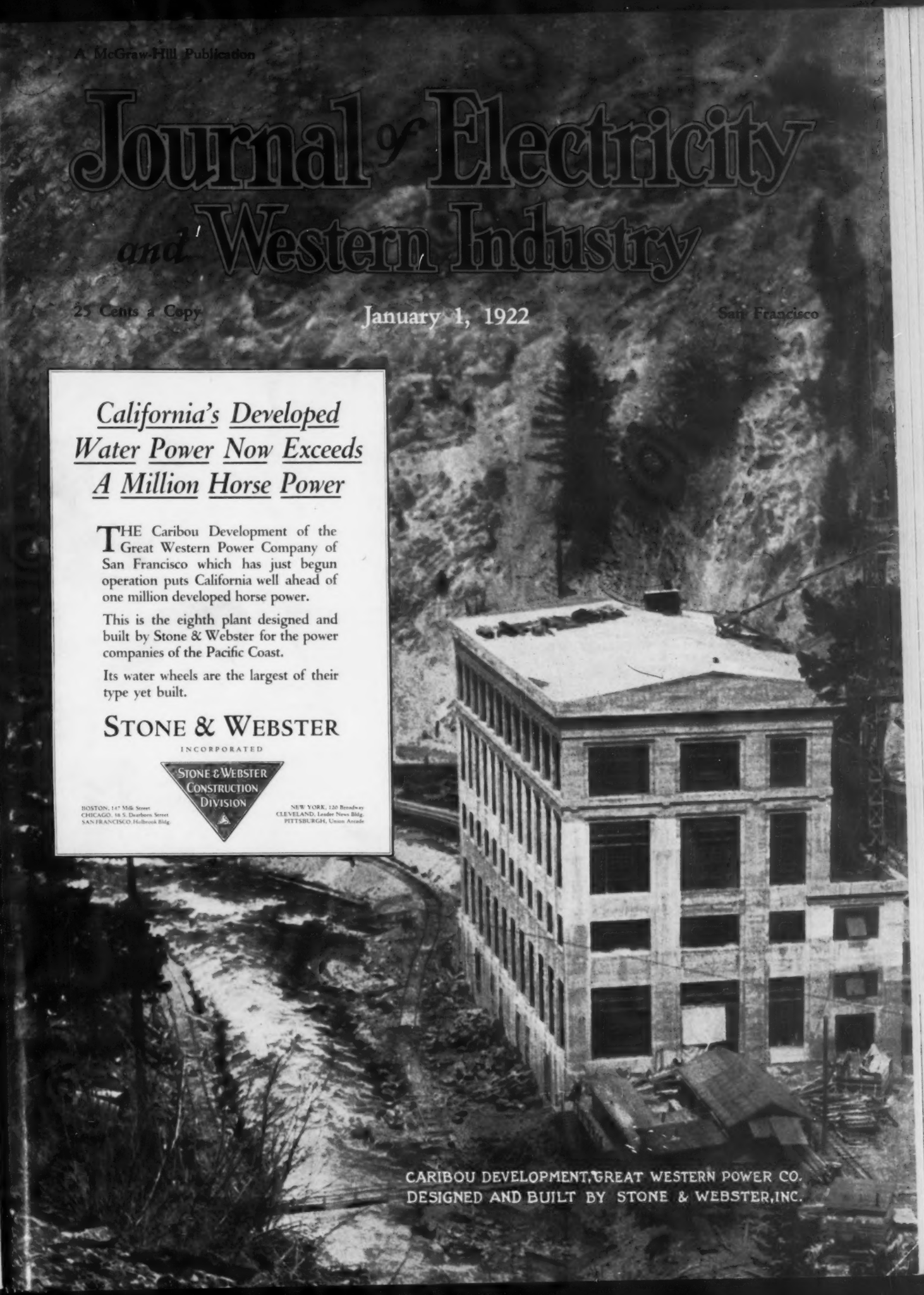

CARIBOU DEVELOPMENT, GREAT WESTERN POWER CO.
DESIGNED AND BUILT BY STONE & WEBSTER, INC.

In appreciation of the cordial relations that have existed between you, our customers, and ourselves during the year just ended—relations which were founded on the substantial basis of service asked and service given—we extend a most sincere wish for a continuance of them and for continued prosperity for you during 1922.

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Journal of Electricity and Western Industry

A semi-monthly chronicle of western events, advocating the economy, efficiency and convenience of electric power for all industries of the West—manufacturing, agricultural, mining, merchandising, home building and home making. Interpreting the value of electrical development to the business and financial man, the industrial man, the power man, wholesaler and retailer, contractor and constructor, engineer and home owner.

Because of the abundance of water power in the West susceptible of economical development, a dependable, uninterrupted supply of cheaper electric power is assured for these industries. The basic industry of the West—hydro-electric power generation—for which Journal of Electricity and Western Industry is the spokesman, is therefore logically and inseparably linked to the growth and prosperity of all phases of our daily life and business.

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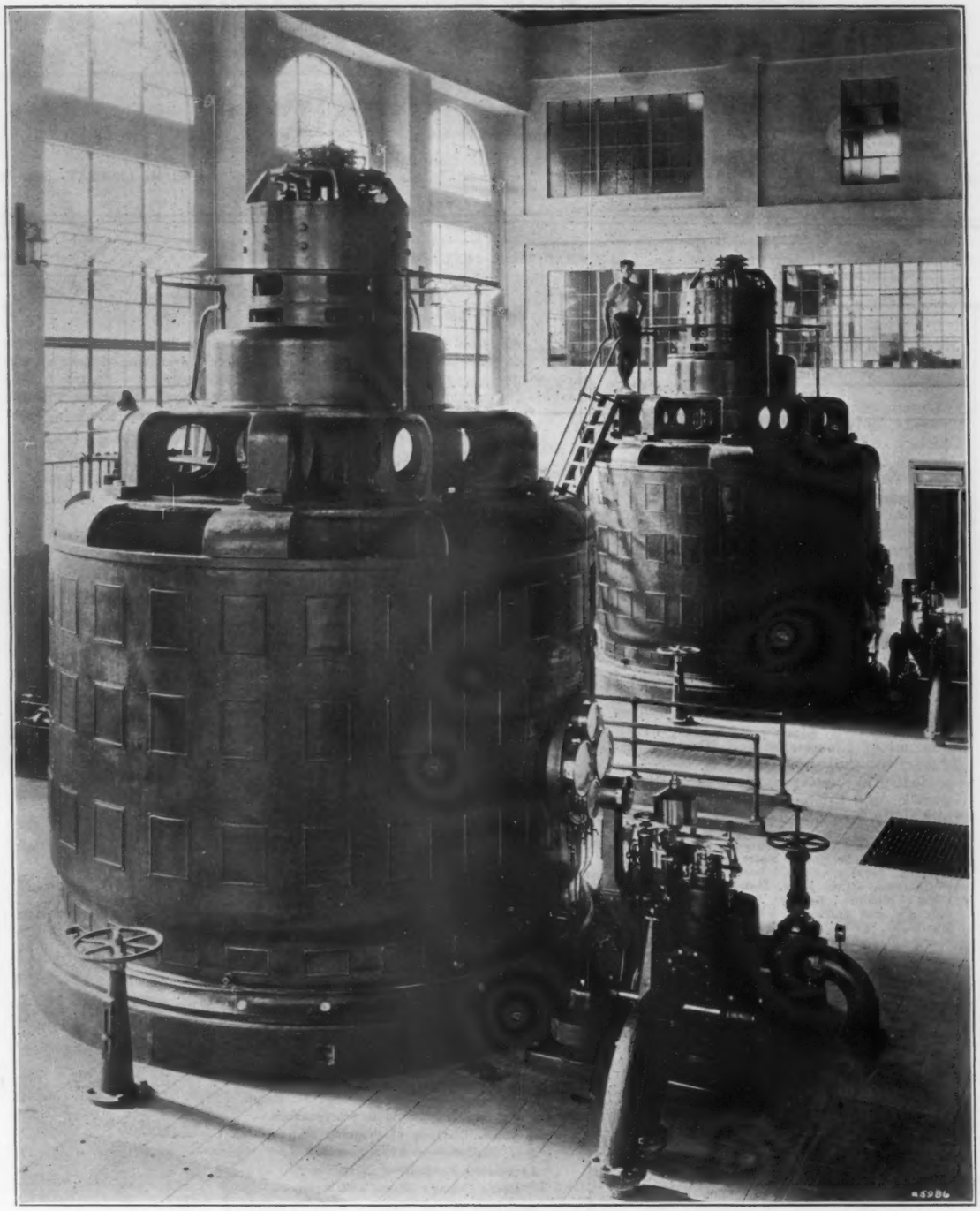

A NEW RECORD OF THE WESTERN POWER INDUSTRY

THE world's highest head reaction turbines, installed during the past year in the Kern River No. 3 plant of the Southern California Edison Company. These turbines are of the single runner reaction type, of 22,500 hp. each, operating under a head of 806 ft., which is a record for this type of wheel. An interesting feature in connection with the installation is the fact that it is arranged to operate at either 50 or 60 cycles with equal efficiency. The power companies of the West are continually working out new records of economic operation in the development of their service to western homes and industry.

JAN 10 1922

Journal of Electricity and Western Industry

A McGraw-Hill Publication

ROBERT SIBLEY, EDITOR

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The West Has Outgrown Main Street

THE small town era of every community is marked by much home oratory and generally by desperate rivalry with some nearby equally small town, whose inhabitants are without merit and whose baseball team is superior only because it hires outside talent. A little later on, the town acquires a Chamber of Commerce and the size of apples in the adjacent farming country grows and the school-hours-per-child and the park-area-per-inhabitant are quoted triumphantly against the inferior rival. Whose inhabitants, incidentally, retort with figures on the square feet of pavement and the street lighting system.

The West has long since outgrown provincialism. In every line of accomplishment, it holds a position of dignity among other sections of the country in its development. With its marvelous wealth of resources and the stimulus of pioneer conditions which it has offered, it has come to rank first along many lines of achievement, from high grade agricultural and horticultural products and mineral wealth, to hydroelectric development and many phases of manufacturing enterprise. It stands, moreover, at a fortunate position of unexhausted resources, with its greatest development yet to come.

In working toward this development, in attracting eastern capital toward the upbuilding of the West, in bringing out the utmost that the country offers in its unfolding, there is no room for small-town pettiness. Inaccurate statistics colored to favor one community do not form a vital argument in attracting industry, nor is semi-jocular interdistrict name-calling a sane method of local advertising.

The West has a common cause in its need for outside capital and a common bond in its sectional pride. If it is to develop on a permanent basis, it must develop, each district in accordance with its natural advantages of position and resource. What is needed is a coast-wide study of common problems and cooperative action toward their solution. Why should there not be a Pacific Coast Manufacturers' Association and if you will, a West-wide Chamber of Commerce? It is time for the entire West to stand together and to work together toward a common goal.

Prompt Development Needed for the Colorado

TO those seeking a more general knowledge of the problems attendant upon the full development of the Colorado River, the Riverside convention of the League of the Southwest was a success. For those who expected more than this, it was a failure. The San Diego hearing was but little more satisfactory. Secretary Fall's stand that the project should be carried out by the government is uniformly approved, providing the government is prepared to go ahead with the project immediately. It still remains for Congress to pass upon the project, however, before money can be appropriated for its carrying out—and in the meantime there is no prospect of immediate work upon the Colorado.

The power need is not for the moment pressing, although it is none too soon to prepare for the development of the future—but flood control cannot wait. One of the most impressive talks of the Riverside meeting was the account of the patrol of the river with pickaxe and shovel which is a yearly vigil of farmers along its banks, followed, despite all precautions, with the loss of crops and land when the river rose beyond control. Few people realize how close the Imperial Valley region came to another flood during the past year, when, for a stretch of three miles, the Colorado rose a foot above the Volcano levee. Night and day work and a rampart of sand bags was all that saved the basin.

It is now urgent that the matter be brought before Congress so that, if the government does not care to spend the nation's money in this development, it can step aside and make way for private capital. With its acknowledgment of prior rights to irrigationists both above and below the Grand Canyon and its willingness to submit to strict regulation and its readiness to start immediate work, the offer of the Southern California Edison Company is difficult to refuse. The West is not so much concerned with the question of who does the work as it is with the getting of it done. What is needed is prompt action.

Injustices Through Misleading Advertising

ONE of the boasts of the electrical industry has been the fact that even during the war and post-war period, its rates remained low, the increase over 1920 figures never rising above 12 to 15 per cent.

Clothing at the same time registered an increase of 225 per cent, coal 155 per cent, while the average of all commodities showed an increase of 125 per cent. It is therefore particularly unjust to find recent advertising by a firm manufacturing toilet articles, bracketing fuel and light under the same head and featuring them as the highest commodities on the market at the present time. The advertisement consists of little sketches indicating how much of given commodities could be purchased for the same amount of money in 1915 and 1921, with a view to featuring the particularly low cost of their own products. An electric lamp and a coal scuttle are shown side by side and credited with increased costs amounting to 99 per cent. This is misleading and a real injustice to the electrical industry, which should take pains to give wide publicity to the facts of the case.

Another instance of rather more deliberate injustice is the advertisement of an insurance company recently called to our attention. This shows a scene of wreckage and features in bold headlines the fact that Sacramento, California, was recently visited by a tornado which carried destruction in its wake, urging prompt insurance of the property of the reader in order to provide for such loss. Now a tornado in popular parlance implies a catastrophe of the same rank as a cyclone or an earthquake of some proportions. Those familiar with western climatic conditions in general or with the storm in question will recognize that it was worth mentioning only because it was the only "twister" history records in California. It did little more damage than to injure a roof or two. Advertisements of this sort should not go unquestioned. Usually the firm who runs them will withdraw them when protest is made —or if too flagrant, one of the functions of the Federal Trade Commission is to rule on questions of misleading advertising.

Industrial Significance of Standardization

MUCH has been said of the menace of German industrial competition in foreign and even in local markets. The bulletin recently issued by the American Engineering Standards Committee on Industrial Standardization in Germany is of especial significance as indicating one of the elements in the situation which is of greatest advantage to German manufacturers in serving foreign customers. The organization for the standardization of industry in that country is highly developed and far-reaching, paying particular attention to dimensional standardization, a factor which involves interchangeability of supplies and machine elements, and the interworking of parts and of related apparatus made by different makers. The electrical industry is particularly advanced in this work.

There is no need to turn to Germany for arguments in favor of development along lines of national standardization of American industries. Standardization stabilizes production, in that it relieves the manufacturer of the dangers of shifting requirements and makes it possible for him to accumulate stock. It reduces selling costs and places the buyer and seller on understandable terms with one another, thus promoting fairness in competition. It lowers costs, eliminates waste effort on scattering lines, and makes for efficiency. It is one of the basic requirements for satisfactory relations in establishing a foreign trade. And last, but not least, as has often been pointed out to the electrical trade in these columns, it increases the confidence of the public who are impatient of inconvenience and confusion brought about where standardization has not been considered.

American railroads were the first to adopt uniform track gages and American lamp socket manufacturers were the first to consider the convenience of a moving public. We cannot afford to fall behind in the less conspicuous but equally important field of industrial standardization.

The advent of the electrical home in the West and the widespread use of electrical appliances in this region, make the question of the standardization of plugs and outlets one of particular importance. How long will it be before we realize that a practice which results in annoyance to the purchaser, as does the lack of standardization in this field, is really one of the greatest drawbacks in the selling of the electrical idea?

Channels of Distribution For Electric Irons

ELECTRICAL retail establishments sold 58.5 per cent of the electric irons produced by seven manufacturers during 1921. This is a slightly less proportion than during the previous year, when 59.9 per cent were distributed through this channel. Irons sold by the hardware trade decreased even more markedly, both in percentage and number, 1921 figures accounting for 18.4 per cent of the output through this channel. House furnishing and department stores increased somewhat as an agency for this product, sales increasing from 10.7 per cent in 1920 to 9.8 per cent in 1921. These figures are significant of conditions as indicating the growing importance of the department store as a factor in retail distribution.

Figures for six months of 1921 are as follows:

Company	Distributed Through Electrical Trade	Through Hardware Trade	Through House Furnishing and Department Stores	Miscell. Channels	Total Production
A	2,500	2,500	5,000	2,500	12,500
B	15,000	30,000	7,500	7,500	60,000
C	76,000	1,000	1,000	800	80,000
D	.....	.....	.....	.....	.....
E	60,000	20,000	5,000	.....	85,000
F	25,000	1,500	14,000	5,000	45,500
G	25,000	15,000	12,000	12,000	64,000
H	87,000	21,000	21,000	21,000	150,000
Seven Companies	290,500	91,000	66,100	48,800	497,000
Percentages	58.5%	18.4%	13.3%	9.8%	100%

The full importance of the electrical dealer is not wholly apparent from this statement, however, as the three largest manufacturers of irons are not included in the compilation of figures. The larger well established firms are always those which find their widest distribution through the electrical trade.

while the newer and smaller companies entering the field are forced to use the hardware, the house furnishing and department stores. Even these products, however, find their widest distribution through electrical channels. The survey, which is the result of a questionnaire sent out by the eastern office of the McGraw-Hill Company, is a striking tribute to the importance of the electrical retailer in the chain of electrical merchandising.

A Few Sidelights on Ontario Rates

THERE has been much talk recently of the Ontario Power Commission, its schedule of rates being quoted by advocates of municipal and state ownership of electric utilities to indicate what striking reductions in rates would result were the government to go into the power business. Like most comparisons which involve municipal and private company accounting, it is difficult to come to a fair basis of comparison. Ontario figures, except in isolated instances of lighting rates, are quoted in terms of the "horsepower-year." This is a maximum demand rate. That is to say, it is as indefinite as the early flat rates of the western power companies, under which the possessor of a 24-hp. motor was charged on the basis of the rating of his motor, irrespective of the extent to which he used it. A manufacturer who had occasion to use power for eight hours of the day only, would thus pay for 24 hp., whereas his use of electricity would amount to the equivalent of 8 hp. In other words, the rate in such a case is in reality three times as heavy as it would appear. No comparison of rates of this type can be made. Figures quoted by one system may refer to a customer on their own lines with a 20 per cent load factor, while the instance quoted from their competitor's books may refer to a case in which the plant operates at continuous load.

If individual cases can be taken—and Ontario does not hesitate to compare an average rate on their own lines with a maximum rate in Denver—it is possible to find flat rates on the systems of almost any privately owned system which are lower than the Ontario rates quoted.

It is significant that in public discussions aimed to show the success of the Ontario system, figures are not given in terms upon which any comparison can be made. It is easy to present any condition in a favorable light, if your hearers are ignorant of the unknown factors involved—but it is only fair that those who listen should understand that comparisons in this case, if not odious, are at least misleading.

Making Available Forest Products Research

FOR more than ten years the Forest Products Laboratory at Madison has been studying wood, always with the object of developing its most efficient and economical use. During that period it has amassed a great deal of scientific information of the most practicable application. Great credit is conceded the Laboratory for its research accomplishments but in the final analysis the value of its work must be measured by the extent to which the results of its work are known and effectively applied by the wood manufacturing industries. It is believed that this phase of the Laboratory's work is not being developed to an extent which its research results and industrial needs justify.

There is at Madison, we understand, a great deal of information which it has never been possible to supply to the industries, because the Laboratory has not had the money or men to put this information in usable shape for the business man. From the standpoint of the West, the value of this experimentation depends largely upon the extent to which it can be disseminated.

In order to carry on this publicity, the Laboratory's appropriation should be increased a minimum of $100,000. Those interested in the effective continuation and development of the Forest Products Laboratory should see that their local representatives in Congress are impressed with the importance not only of providing the normal appropriations for its work but in urging the moderate increase for the special purposes outlined.

The Value of a Friendly Word

MERE friendliness is one of the most important of selling appeals. The importance of a friendly attitude toward the public is strikingly brought out by a recent letter sent out by the J. B. Terry Company of Cedar Rapids, Iowa, to central stations throughout that state. The letter contains the following paragraph:

> Something was wrong with the retail sales of a large central station. An expert was called in to find out the reason for the slump in sales. The store was attractive, the merchandise of dependable quality, the place was well lighted, the terms of sale were agreeable, but the trouble was—the clerks always let the customer break the ice. The atmosphere was chilly. The expert told the manager to insist on every clerk saying "Good morning" with a smile, and saying it first. The sales the next six months increased 33 1/3 per cent—practically all of which was traced to the "Good morning." It will cost you nothing to insist on this and it will pay well.

The thing is very simple—and the reason back of it is that folks, including customers, are merely human and react to the same qualities in their business relationships that they do in the choice of their friends.

Radio Message Heard in Washington, D. C.

REPORTS have been sent in from as far off as Washington, D. C., and Minnesota, that the Monday radio news bulletins of this office have been heard and enjoyed. This means that this message of western business reaches practically every one of the 700,000 radio amateurs who are listed in the United States today. The Journal of Electricity and Western Industry is pleased to have been one of the first to recognize the importance of the radio phone as a medium of business importance, as well as a source of entertainment.

Western Comment on Current Events

Editorial Notes and Readers' Views on the Outstanding Aspects of Financing, Trade Promotion, Legislative and Associated Topics that have a Special Bearing on Western Business

Urge Prompt Development of Colorado

Unless Government Is Prepared for Immediate Development, It Should Not Stand in the Way of Private Enterprise

FLOOD dangers in the Yuma and Imperial regions necessitate immediate action upon the Colorado, according to J. B. Lippincott, consulting engineer of Los Angeles, who spoke on December 16 before the Engineers' Club of San Francisco. Mr. Lippincott pointed out that 86 per cent of the flood waters of the Colorado enter the river above the proposed site of the upper or Glen Canyon reservoir and that the most favorable location for power development was at this point. Irrigation interests, on the other hand, find their ideal site at Boulder Canyon. Protests from the upper river on the ground that lower development would curtail their possibility of appropriating water later on were satisfied by figures which show that with the storage of flood waters, the entire 4,812,000 acres in the irrigable area of the Colorado basin could be served, with something more than 1,000,000 acre-feet yearly surplus. In conclusion, Mr. Lippincott urged that unless the government was prepared to follow up the immediate construction of one or the other of these projects, it should not stand in the way of private capital which is ready to begin prompt development. He said in part:

> "The Secretary of the Interior has taken an unofficial stand in favor of government development, which closes the discussion for the moment. If it is not carried out soon as a federal project, then it would appear best to permit it to be undertaken as a private enterprise regulated by state and national authority as is provided in the Federal Power Act.

O. C. Merrill, executive secretary of the Federal Power Board, explained the provisions of the Water Power Act as they applied to the Colorado situation, pointing out the safeguards to irrigation and flood control in case of private development of either site.

New Cooperative Method Announced

California Canner to Act as Distributor For Fruit Growers' Association on Cooperative Basis

CONSIDERABLE importance is attached to the arrangement announced by Hunt Bros. Packing Co. of San Francisco, by which this well-known canning firm is provided with a steady and satisfactory supply of raw material. They have made a contract with the Fruit Growers of California, Inc., of San Jose, whereby the latter agrees to furnish, for canning purposes, a stipulated amount of fruit and vegetables each year in the various varieties in which its members are concerned.

Hunt Bros. Packing Co. will pack and sell the fruits grown by the members of this cooperative organization, handling the tonnage delivered on a cooperative basis, and returning to the growers their share of the proceeds. This arrangement, while providing the canning company with a satisfactory supply of fruits and vegetables, insures the growers an outlet for their product and their proper proportion of the proceeds.

This policy will be general with the packing company, and it is understood that similar arrangements are expected to follow with other growers' cooperative organizations and also with individual growers with whom the canning company has been doing business for many years.

This marks a new adventure in the realms of cooperation in which the West has already achieved so much success. It comes on the one hand as a reaction against the growing tendency of canners to own their own sources of raw materials, and on the other, the operation of canneries and packing houses by the farmers themselves. In the incentive which it offers to the grower to maintain the highest grade in the products furnished for canning, as well as the guaranty of an adequate supply, the arrangement would seem to have solved one of the great stumbling blocks to individual contracts.

Alaska Mining Development for 1919

Government Census Report for Alaska Mines Shows Prevalence of Isolated Plants in This District

ALTHOUGH the output from all mines in Alaska decreased slightly from 1909 to 1919, the size of plants and the number showing permanent installations had greatly increased. The number of enterprises decreased in the past ten years from 607 to 346. This is indicative of the change in character of organization, the typical working in 1909 consisting of small bonanza outfits, mostly engaged in the placer mining of gold. Lode mining which requires more machinery and fewer men has largely displaced the old methods at the present time.

An idea of the character of power development in the territory is seen from the statistics which show 29,979 hp. in use by mining enterprises, 29,829 of which was developed by steam engines and turbines, internal combustion engines and water wheels

and turbines owned by the operators using them. Seven electric motors operated on purchased current amounted to not more than 150 hp., whereas 468 electric motors were used in plants in which the power was generated on the spot. Fuels used in power generation were as follows:

Coal, bituminous	(tons)	8,387
Wood	(cords)	24,812
Fuel oils	(barrels)	165,780
Gasoline and other volatile oils	(barrels)	1,990

Colorado Protests Preferred Rates

Through Rates From Atlantic to Pacific Coast Would Cripple Wholesale Business in Intermountain District

ARGUMENTS against the proposal of transcontinental railroads to establish through rates from Atlantic to Pacific Coast points were presented to the representatives of the Interstate Commerce Commission at a recent hearing in Denver. It was pointed out that the manufacturers and jobbers of the Intermountain district would be siolated, so far as business is concerned, if the railroads carry through their plan. It would be possible, it was argued, for San Francisco merchants, jobbers and manufacturers to pay freight on commodities purchased in the East and to reship them back to Denver to undersell the producers of similar commodities there. Similar hearings were held later in Helena, Montana, and Salt Lake City.

Coast cities, on the other hand, contend that the development of jobbing centers in the intermountain district was largely the outcome of artificial conditions obtaining during the war period when canal shipments ceased and that the welfare of the country demands that both rail and water transportation be allowed to maintain a healthy business to coast points.

It is reported that the intermountain interests will take the matter to the Supreme Court if the present appeal of the railroads is granted.

Over 13,000,000 Hp. in Western Filings

Report of Federal Power Commission Indicates Need for Larger Personnel to Handle Great Volume of Applications

ACCORDING to the report of the Federal Power Commission recently issued, there have during 16 months been 185 applications filed for preliminary permit and 85 applications for license to develop water power, which, after deducting conflicting applications and those rejected or withdrawn, aggregated the stupendous total of 16,826,000 hp., estimated installation. This is twice the water horsepower which has been developed in the United States to date, and from five to six times greater than the aggregate of all applications filed with the Federal Government during the preceding 15 years.

The country could not, of course, absorb at once all the power projected for development, and many applications may never be carried out. It is the belief, however, that the greater part of the horsepower involved will eventually be constructed. To complete the projects applied for will require capital exceeding in the aggregate two billions of dollars. The collateral expenditures for distribution systems, for customers' installations, and in accessory industries will be several times greater.

The distribution of applications by states is as follows:

	Number of applications	Horsepower: Primary (90 per cent of time)	Horsepower: Estimated installed capacity
Alaska	31	217,200	279,000
Arizona	13	3,544,160	4,750,000
California	80	2,118,810	4,057,075
Colorado	4	50,660	100,000
Idaho	12	90,650	189,185
Montana	14	319,875	532,450
Nevada	1	(Transmission Line)	
New Mexico	1	2,750	25,000
Oregon	10	466,060	832,800
Utah	6	918,015	1,212,465
Washington	18	699,930	1,112,640
Wyoming	4	1,410	1,410
Total Western States	194	8,429,520	13,093,045
New York	16	1,712,845	2,192,830
All other states	50	917,545	1,540,350
Total,	260	11,059,910	16,826,225

Large Electrical Trade with Orient

October Exports Show Growing Importance of Trans-Pacific Trade in Electrical Apparatus and Accessories

SHIPMENTS of electrical goods to the Orient during October indicate the growing importance of that part of the world as a market for American-made electrical equipment, oriental business making up a large percentage of this export, says a statement just issued by the Department of Commerce. When shipments to contiguous markets like Canada and Mexico are set apart, the value of the Far Eastern exports becomes all the more apparent.

An interesting new market for heating and cooking apparatus is Kwantung in China, to which shipments valued at $8,827 were sent during October. The total for the month in this class was $74,302 worth.

Of a total of $161,462 worth of meters and measuring instruments, October shipments to Japan were valued at $40,447. Of $779,338 worth of motors and dynamos shipped, Japan absorbed $127,409 worth. That country also received the largest shipments of motors—$88,678 worth, and rheostats and controllers to the amount of $12,588.

Heavy shipments of switches and accessories across the Pacific during October are noteworthy. While Canada received the largest amount, exports to China were valued at $56,718, and Australia's purchases at $21,890. A total of $176,154 worth was exported to 38 different markets.

Telegraph apparatus exported during October was valued at $42,769, the largest shipment being to Hongkong. Transformers valued at $464,281 were exported during the month. Shipments of $119,751 worth went to China and $77,670 worth to Chile. France was the most important European buyer, taking $74,060 worth.

October exports included in the miscellaneous classification "All other materials" amounted to $1,737,477, the three most important markets being Canada, Japan and Italy.

Letters to the Editor

Senator Rominger Comments on Features of California Water and Power Act

To the Editor:

Sir: Under the initiative measure proposing the California Water and Power Act, the control of expenditures will be entirely in the hands of a Board of five members, only one of whom would be a paid official, the others receiving compensation at the rate of $20.00 per day when service is performed. Three members of such Board will constitute a quorum. This would result in the executive direction of the enterprise being practically in the hands of one man. Contrast this with the proven necessity for fifty or more seasoned experienced executives of the privately owned companies of the state who under State Railroad Commission regulation are successfully developing the state's electrical resources and providing the means for intensive growth with increasing community wealth, upon which the future prosperity, if not the very existence of the state depends. This one-man Board would be responsible for the construction of works for the delivery of power and water, for making contracts with municipalities, for the issuance and sale of five hundred million dollars of state funds, for the fixing of just and equitable rates, and at request of municipalities, for the acquirement or construction of distributing systems in hundreds of municipalities in the state.

It is true that state bonds would sell at a lower interest rate than the bonds of the public utility corporations, but of what avail would this be if the cost of construction under this experiment should be two or three times as much as the necessary cost under private initiative with public regulation? Take the Los Angeles power developments. Publicly in December, 1912, the Los Angeles voters were promised that 120,000 horsepower would be developed along the line of its aqueduct at an estimated cost of $7,200,000. The Los Angeles Power Bureau's report at June 30, 1921, shows that 72,000 horsepower has been developed and that the cost has been $10,800,000. At the same rate the total cost of development for 120,000 horsepower would be $18,000,000, or two and a half times the original estimate. Which then is the cheaper—$100 at 8 per cent, or $250 at 6 per cent?

Truly the question has been asked as to what would happen if any of the state projects should fail to bring results. It is pointed out that the act places the taxing power of the state behind all projects. Again, let us see what happened under a similar scheme in Los Angeles. In January, 1913, the voters were publicly promised that a certain bond issue would finish the generating works and provide a complete distributing system, making it certain that the city tax payers would be relieved from further taxation. The official record to June 30, 1921, shows that the tax payers have paid $5,385,000 for practically all of the annual interest and sinking funds on these municipal power bonds which were presumed to pay their own way. During the same period only $605,000 was contributed from the earnings of the municipal system.

Such records as these will keep the people from being misled by the repetition of roseate promises. The danger of failure is much greater in the state proposition than in a local municipal undertaking, since to be successful at all the state proposition must include all of the power development within the state, and its distribution to all municipalities. On this basis, the $500,000,000 of bonds, staggering in amount as it is, would be entirely inadequate to perform the task. No one would anticipate successful operation of the public system if long transmission lines must traverse territory and pass through municipalities not using any state service. It is inconceivable that the individual voters in all of these municipalities would simultaneously adopt this experiment, and the result would be that one municipality being served, the lines would have to travel perhaps hundreds of miles through barren territory to some other municipality which might choose to try the game.

JOSEPH V. ROMINGER,
State Senator of California.

Long Beach, Cal.

Bell Loud Speaker, not Magnavox, is Used in Transmitting President's Speech

To the Editor:

Sir: In reading your recent editorial on "Making a Speech to a Nation," I agree with you thoroughly until we come to the statement, ". . . it is pleasing to remember that a western invention played an important part in its success."

If, in this connection, you refer to the Magnavox, then I must disagree with you and take this opportunity to let you know that the Magnavox had absolutely nothing to do with the Armistice Day services. I appreciate, however, how this error may have crept into the minds of the uninformed, because we took special precaution not to advertise unduly the Bell Loud Speaker. You will appreciate that the Bell System did not want to let any scientific achievement detract from the dignity and solemnity of the occasion. Hence, we took precautions to keep the scientific end of the Armistice Day service entirely in the background.

A. J. CHAMPREUX,
Transmission Engineer, Pacific Tel. & Tel. Co.

San Francisco, Cal.

Salt Lake Jobber Holds that Recovery from Depression Depends on Individual

To the Editor:

Sir: While business in general in these parts is rather dull, business men are organizing and making every endeavor to protect and secure whatever business is available.

The dealers throughout this section are largely looking to the jobbers for guidance in the conducting of their business for the coming year. In this connection I am sending herewith extracts from a letter received by a Pocatello dealer from Mr. J. A. Kahn, president of the Capital Electric Company, which I think worthy of passing on to your readers.

"While we are largely subjected to local conditions, we are still vitally dependent upon national, and in fact international conditions. Consequently I have to form my personal opinion on that basis.

"It seems to be the general impression that we have reached the bottom and are now beginning the ascent. However, profound students of economics point out that three times in our national history prices have multiplied two and one-half times, each of these periods occurring immediately after a big war, and that fluctuatingly, but consistently, declines took place over a period of twenty-five to thirty years that reduced prices to nearly their previous low point. Prior to 1920 prices increased intermittently for thirty years and if history repeats itself, which it has a fixed habit of doing, prices will go down for the next twenty to thirty years. This will cause business men of your age and mine to unlearn everything we have learned. We have gained our business training during a period of consistently increasing prices.

"During our business careers we have had the advantage of being able to sell our goods on a rising market and the principles of doing business under that happy condition are very much more favorable than when the general market has a declining tendency. In the long pull period ahead we will have to buy more scientifically and sell more intensively and intelligently. By this I mean our salesmen will have to be better trained and work harder.

"I recently read of an experience the Gimble Company had. They found that in their Chicago store the drug department was not doing a satisfactory amount of business. They tried the following experiment: They put a lot of trays in their show cases upon which they put articles that would naturally go together. For instance, on one tray they put a tooth brush, tooth powder, tooth paste, listerine, mouth wash, etc. On a tray with safety razor blades they put shaving cream, soap, face lotion, talcum powder, etc., and carried out the idea throughout every line. If a customer said 'I want a tooth brush' the tray with a tooth brush, etc., was placed on the counter. They found that the first month after this innovation was applied, their drug business increased 500 per cent. This shows conclusively that sales people are not selling and suggests a lesson that dealers in other lines could well afford to adopt. If a customer comes into your store to buy any article, inquire by display and suggestion as to other articles that naturally associate themselves with the article asked for.

"Another thought: Do you know that 90 per cent of all goods bought at retail in the United States are bought by women? That being the case, dealers should select such sales people as will appeal to women and know how to appeal to and serve them. Their appearance, language, courtesy, chivalry and habits should be determined to be above reproach before being engaged. Your sales people should be trained by you to thoroughly know all the goods you carry and memorize the selling prices. They should become experts in their line so that when they serve a customer the impression made should be so favorable that the customer will tell her friends.

"Business is going to be what we make it. Any merchant by having an honest policy, a well located store, properly arranged to attractively display his stock, kept clean and inviting and provided with representative sales people rightly trained and instructed into the new order of business, will succeed and prosper.

"If you can create business out of possibilities that exist, but that might not naturally develop if not created by you, your company can secure a profitable volume. I feel it is my province and my positive duty to spread this sort of gospel, for we and the manufacturer are at the mercy of the retailer. If he does his part of the job by making sales and not supplying demands, our business will grow; if not, we cannot hope to expand it.

"To sum up this lengthy dissertation. Is your store and stock as attractive as you can make it? Are your clerks qualified and instructed to appear and deport themselves appealingly to 90 per cent of your customers, namely, women? Have they a thorough knowledge of everything they attempt to sell? Have they memorized the selling prices of everything in stock? Do they realize that their personal earning power is dependent upon the number of persons who seek them out to serve them? Do they know that their employers' firm policies are honesty, courtesy, and a desire to disseminate information regarding the process of manufacture, service, care and application of the goods he sells? If not, then your urgent job is to instill that information and give the training."

B. E. RAWLEY, District Sales Mgr.,
Salt Lake City. Edison Electric Appliance Co.

Radio Bulletins

The Journal of Electricity and Western Industry offered the following review of events of the week as its regular Monday night engineering and industrial review on December 20th:

The conference at San Diego, called by Secretary of the Interior Fall, will recommend to Congress that the national government develop the Colorado River project. Power will be a minor consideration, irrigation and flood control coming first.

The Construction Company of North America, a San Francisco firm which is driving the Hetch-Hetchy tunnels, has made an offer to the U. S. government for the Muscle Shoals project on the Atlantic coast, which is reported to be considerably in excess of the offer made by Henry Ford for the same development. Officials of the San Francisco company have gone to Washington to discuss the offer.

The California State Harbor Board has called for bids for the first unit of the two-million-dollar water and rail terminal which is to be erected on San Francisco Bay.

Exports from Portland, Oregon, during the month of November exceeded six million dollars. Two-thirds of the amount consisted of wheat, sent to Asia and Europe to make up the shortage of crops in countries there.

Shipyards on San Francisco Bay launched twenty-seven ships during 1921, aggregating 240,000 tons. Three of the largest vessels ever built on the Pacific Coast were included in the list.

The bridge across San Francisco Bay has received the approval of the government officials in Washington, D. C. Plans are already under way for a preliminary survey which will cost $150,000.

While the Northwest is in the grip of storms which have done hundreds of thousands of dollars property damage and caused the loss of several lives, weather officials report that rainfall in central and northern California and Nevada is less than half the normal amount to date. In Nevada there is already a fear of shortage of water both for irrigation and power purposes.

The Journal of Electricity and Western Industry offers the following business summary for the principal cities of the West:

San Francisco: The holiday business is in full swing. Post office officials announce shipments by mail are breaking all records. Wholesale trade is only fair as is industry. Unemployment has decreased slightly. Fair sized price reductions are expected in many lines immediately after the holidays.

Los Angeles: Rainfall to date is normal, yet has not interfered with the harvesting of the citrus crop, which promises to be large. The building boom has apparently not reached its peak. The motion picture industry which has been almost dead for a year, is expected to reopen on a large scale after the first of the new year.

Salt Lake City: Christmas buying is progressing satisfactorily. Electrical devices are moving rapidly owing to an intensive cooperative sales campaign. Loans advanced by the War Finance Corporation to farmers and stockmen have brought some relief.

Denver: Reports are being widely circulated that there will be a resumption of activity in the mines throughout the Intermountain district after the first of the year. Production in the flour mills is fifty per cent above last year. General business conditions are better than in any other city in the Tenth Federal Reserve District.

Portland: After a slight recovery business has again been crippled by severe storms which have caused considerable property damage and tied up transportation. Production of lumber is slightly below normal and there is a scarcity of logs.

Seattle: Six inches of snow in Seattle together with a heavy rainfall throughout the inland, demoralized business during the past week. Property loss to telephone and power companies was heavy while several lives were lost. Washouts and slides tied up transportation completely. Even the seasonal holiday trade has been affected and sales have dropped off considerably.

Builders of the West

"SUGAR is nothing more nor less than concentrated sunshine." This statement adorns the title page of a most complete, exhaustive and entertaining volume entitled "Something About Sugar." George M. Rolph, general manager of the California and Hawaiian Sugar Refining Corporation, who speaks so authoritatively on the history, growth, manufacture and distribution of this commodity, could not have more accurately described his own personal characteristics, according to the unanimous statement of those who know him. And "those who know him" includes all the employes of his company. It seems quite logical that he should have acquired some of the characteristics of sugar since his pet hobby is the company's refinery at Crockett, California, where he spends any available spare time he might have.

GEORGE M. ROLPH

Builder not only of structures and institutions, but of men; one of the foremost authorities in the world on sugar and its manufacture; an engineer and able executive, who holds the sincere regard of the entire personnel of the concern which he directs.

Mr. Rolph was born in San Francisco in 1873, and is from one of San Francisco's oldest families, consisting of five brothers and two sisters, all of whom have been prominent in San Francisco's growth and development. After successfully surviving a midnight tumble down a stairway in his father's arms, while assisting in routing a burglar, he has had a life of color and adventure. He attended public school in San Francisco, his work being marked by a passion for mechanics. While his eldest brother, James, now mayor of San Francisco, displayed his executive ability in managing the younger members of the family, George Rolph spent his time repairing the plumbing and inventing derricks to hoist water tanks to the top of the family residence. Upon his graduation from Cogswell College he was offered a position as instructor in mechanics at Stanford University, but decided to learn his trade as machinist in the Risdon Iron Works. This accomplished, Mr. Rolph went to work as storekeeper for the Sanger Lumber Company in the mountains back of Fresno, California, where he remained some six years, rising through the various positions until he became superintendent and manager. He was selected for his executive ability as secretary of the Hawaiian Commercial and Sugar Company and remained in this position for about five years. In 1903 he went to the Hawaiian Islands as assistant manager for Alexander and Baldwin, Limited, which is one of the largest companies operating in the sugar industry of these islands.

It was while in the Hawaiian Islands that he organized practically all of the plantations into the Sugar Factors Company, Limited, so as to better market and ship the combined sugar produced by these various plantations. Upon his advice the Sugar Factors Co. purchased an old beet sugar refinery located at Crockett, California, and organized the California and Hawaiian Sugar Refining Company to operate the refinery. Mr. Rolph was placed at the head of this new company as its general manager. The refinery was placed in operation in 1906 with a capacity of 200 tons per day. Under his able and efficient management it has become the largest and finest sugar refinery in the world, with a daily capacity of 2250 tons.

Here, every modern device for the rapid, economical and efficient refining of raw sugar has its parallel in the provisions made for the welfare, health, education, entertainment and amusement of the employes and their families.

At the request of Herbert Hoover, Mr. Rolph was appointed Chief of the Sugar Division of the United States Food Administration, and later when the United States Sugar Equalization Board was incorporated he was elected president. This board was a clearing house for all sugar problems, supplies, prices and distribution. Mr. Rolph was also a member of the International Sugar Committee.

He has always been active in the city in which he was born and has been one of the commanding leaders in the work of the Chamber of Commerce.

To George M. Rolph, then, builder of men as well as of structures and institutions, engineer and able executive, this issue of the Journal of Electricity and Western Industry is affectionately dedicated.

Reducing Sales Resistance in Developing the Pacific Coast

Local Jealousies and Intercommunity Bickerings Must Be Avoided if Western Community Sales Efforts are to Result in Commercial Prosperity. An Appeal for the "All-Pacific-Coast" Standpoint.

By WILLIAM H. CRAWFORD

OF recent years, the art (or science) of selling has extended to community advantages. Ancient history may have some examples of competition between cities for commercial and industrial supremacy, but not until the last decade or two have we witnessed in the United States and Canada, aggressive selling methods applied to setting forth the various advantages of different localities. This has grown to be a business in itself, usually fostered by a local chamber of commerce or commercial club.

The Pacific Coast of the United States, progressive in all things, gives many striking evidences of modern sales methods applied to community development.

The entire area west of the Rocky Mountains must be regarded as an economic unit, although, of course, it could be subdivided on account of its size, topography, freight rates, railroad connections, distances and density of settlement in such a way as to be made most convenient for actual business operations. The aim of every community on the Pacific Coast should be to thus regard this wonderful area which comprises 25 per cent of the surface of the United States, and at the present time supports approximately 8 per cent of the population.

The next 25 per cent strip going east supports approximately 12 per cent; the next 25 per cent strip, approximately 20 per cent, and the last quarter, comprising the Atlantic Coast area, supports approximately 60 per cent of the population.

Distribution Problem Difficult

With this picture in mind, showing how the density of population thins down as one comes west, it is quite apparent that the Pacific Coast must present some difficult problems in the way of distribution, in order to prevent excessive business overhead. A redeeming feature to the problem on the Pacific Coast, however, is seen in the wealth per capita which means greater buying power, and in the growth per decade as compared with the entire United States. The Pacific Coast has been growing two and one-third times faster on the average per decade for the past three decades.

The wealth of raw material in these western states, the climatic advantages, the strategic location with respect to present and future Oriental markets, makes this coast line a very attractive field of operations.

On the industrial side of the problem, there are three main classes of manufacturing plants that form "prospect" files for the communities that feel they have something to sell.

First, those plants located elsewhere that wish to establish Pacific Coast branches in order to take care of manufacturing and distribution in new fields.

Second, entirely new enterprises to be located on the Pacific Coast to take advantage of Pacific Coast raw material supply and other opportunities.

Third, establishments located elsewhere, but desiring to relocate, entirely, as a result of exhausted raw material supply or mistakes made in the original location.

Unless these concerns are purely local in aspect, catering to the population within a small radius, the only satisfactory way to approach the problem of new location, is to determine where all the elements entering into manufacture combine best with the four main distributive market requirements, namely: international, national, Pacific Coast, and local.

Communities, like individuals and some private corporations, often make the mistake of overestimating their own advantages or their own product and greatly under-estimate that of their competitor.

Commercial Bodies Often to Blame

This tendency has to a great extent discredited the efforts of many otherwise able commercial bodies. Such ill-advised efforts, for example, as preparing a map out of all proportion showing one community served by numerous railroads and steamship lines, while adjacent cities of equal importance are depreciated to the status of a mere flag station or steamboat landing.

It is really surprising how much of this "small town stuff" is indulged in. Thousands of dollars of money raised for community publicity is thus squandered every year, because the only ones who get any satisfaction out of that sort of propaganda are the people who prepare it.

The real business prospects—those whom it is desirable to reach—pass over this one-sided propaganda and seek elsewhere for facts that will be of real help in solving the particular industrial problem that may be uppermost at that time.

There is so much to be learned about the Pacific Coast, it is such a country of magnificent distances and marvelous natural resources, that the world at large must be told in the quickest, most effective manner.

Should Avoid Community Jealousies

Community jealousies, one-sided propaganda, misdirected sales efforts, simply cloud the big issues and represent a vast economic waste.

The entire Pacific Coast area is yet in its commercial infancy. Communities that have already developed the interior; on Puget Sound, on the Columbia River or San Francisco Bay and in southern California, are but the beginnings of the industrial and commercial map of 1950.

There is probably no more favored area in the entire United States than that great country lying west of the Rocky Mountains, toward which the eyes of the nation have turned.

Theodore Roosevelt, when president, had a great vision regarding the Pacific Coast and one of his famous remarks is often quoted:

"The Mediterranean era died with the discovery of America; the Atlantic era has reached the height of its development; the Pacific era, destined to be the greatest, is just at the dawn."

Another famous quotation is that of William H. Seward, when he was Secretary of State:—

"The Pacific Ocean, its shores, its islands and the vast region beyond, will become the chief theatre of human activities and events in the world's great hereafter."

What a destiny for the favored ones now living near this golden empire!

How necessary that all community sales efforts be directed along engineering lines, honestly exploiting the Pacific Coast as a whole, with whatever special emphasis can legitimately be placed on the superior advantages of any one particular locality.

Selling Demands Experts

Only the highest exponents of the art of selling should be engaged in this important work and where a community cannot see the wisdom of first exploiting the Pacific Coast as a whole, that community should confine itself to purely local efforts. By purporting to enlighten the outside world on Pacific Coast conditions and then resorting to gross misrepresentation as affecting every community but the "favored one," they simply stampede all sales prospects and cloud every issue. Communities must either stay out of the Pacific Coast program or go into it with an avowed purpose to state facts as existing, from Canada to the Mexican border and from the Rocky Mountains to the shores of the Pacific.

Every community on the coast has its proper place in the scheme of things, and each has a superb destiny.

The local problem and the Pacific Coast problem always subject themselves to a final analysis under five broad subdivisions:

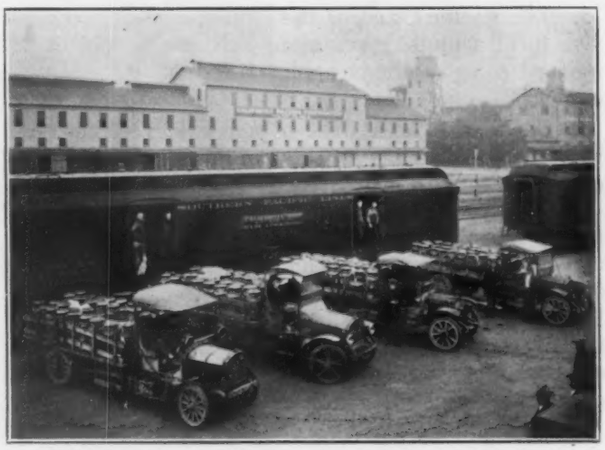
1. Supply of capital
2. Supply of labor
3. Supply of raw material
4. Transportation (rail, automobile, river and ocean)
5. Distribution (international, national, Pacific Coast, local).

This is what the investor wants to know about. It is more than community pride that should inspire the telling of the true story of the Pacific Coast—it is a national duty.

Improving the Mountain Playgrounds

Power Company Plants Three Hundred and Fifty Thousand Baby Trout

THE policy of public utility corporations has always been to build up and make better the territory into which their activities have taken them, and particularly is this evidenced in the public domain where the utility corporations, in cooperation with the Federal Government, are making the mountain playgrounds more readily accessible to the public. In the Kings River basin, where the scenic grandeur of mountain and stream rivals those of many of the national parks, the natural beauties and resources are being more fully utilized through the application of engineering knowledge fostered by the men responsible for water power development in this little-known mountain playground.



Loading the trout onto the San Joaquin Company's trucks at Fresno

Into this wonderland substantial roads are being constructed, bridges are being built over its streams, and in utilizing the waste water, beautiful lakes are being formed.

These advantages are being made available to the public through the activities of the San Joaquin Light & Power Corporation which, during the next ten years, plans an expenditure of $100,000,000, embracing the construction of seven power houses and dams, many miles of road and a number of bridges. An example of this policy of building up the public playgrounds occurred recently when a shipment of 300,000 small trout was transported to suitable distribution points along Kings river by this company. The fish which consisted of Loch Levin, Eastern Brook, Rainbow and Brown trout were from the Sisson hatchery of the California Fish and Game Commission. The consignment which was contained in 125 15-gallon cans was immediately transferred on arrival from a special car to four two-ton auto trucks, manned by ten men, and started on its journey to the end of the wagon road at Balch Camp on the Kings river. The Loch Levin trout were liberated there and the Rainbow and Eastern Brook varieties were reloaded onto a 16-animal pack train and carried to the higher mountains.

Standard Accounting for Municipally Owned Public Utilities

Former President of the State Railroad Commission of California Explains the Importance of Standard Accounting for Municipally as well as Privately Owned Utilities

AGITATION in favor of, or against political ownership, that is, municipal, state or governmental ownership of public utilities has occupied a more or less important place in public discussions, in the daily press and current periodicals, and in political and legislative proceedings, during recent years. In the light of impending legislation in California, where it is proposed under an initiative measure, to place the resources of that state under the unsupervised control of a politically appointed Water and Power Board, it would seem that there are several questions which should be answered before the voters can intelligently pass judgment upon this proposal.

Whether municipal or other political ownership of public utilities is economically unsound, as its opponents assert, or whether it is as efficient and economical as its adherents maintain cannot be determined until an adequate basis of comparison, or contrast, of costs of operation is established. No such basis exists today. This is the greatest bone of contention between advocates of both systems, and statements are freely advanced by the proponents of both methods that the system which they choose to uphold is more efficient and that it throws a lesser burden upon the consumer.

Possibility of Concealment

Until the actual facts of municipally owned utilities are ascertained and given to the public so that the public may determine for itself the matter of policy, this uncertainty will exist. The obvious solution is the establishment of a proper and standard accounting system for municipally conducted enterprises which will remove for all time the possibility of concealment or subterfuge in the presentation of facts. Such a system is maintained by all of the privately owned public utilities under the supervision of state regulatory bodies in all of our western states and is open to public inspectoin.

The Journal of Electricity and Western Industry has announced its belief that the best interests of the West lie in the development of its resources through individual initiative. Before the question can be decided as to which method is the better it believes that the two systems should be placed on an even basis by the establishment of such a standard accounting system.

Edwin O. Edgerton, former president of the State Railroad Commission of California and a leading authority in utility matters, has presented the following views on this subject.

"Sound and accurate accounting is an essential in the successful conduct of any business whether it be public or private. It is manifestly impossible to make proper judgments unless those in responsible charge have accurate information as to the precise condition of the business.

"Imagine the folly of determining whether or not to expand or contract an existing business activity with no accurate knowledge of the financial condition of the enterprise.

"When a municipality enters into business such as the ownership and operation of a public utility service precisely the same reasons exist for exact knowledge of conditions as do in the conduct of any private business.

"Not only is it essential that those in responsible charge of the conduct of a municipal enterprise be fully and accurately informed; but it is also essential that the people of the community have an opportunity, before acting upon proposals, to have the facts. The only method of ascertaining and presenting the facts is through an accurate accounting system.

"Inasmuch as judgments of a given business condition are formed by way of contrast and comparison it is necessary that a standard and uniform system of accounting be established whereby each community must keep its accounts according to an established recognized standard. Only in this way will comparisons be possible.

"It has been said that one of the greatest accomplishments of state regulation of public utilities has been the establishment of a uniform accounting system, so that the public has the assurance that all items are cared for in the same way by all of the public utilities, thus making comparison and check feasible.

"In any state of the Union today under regulation it is possible to check the financial operations of one public utility against another and to at all times compel an accurate and honest accounting through these standard systems of accounts.

"But there is no such system in existence today in most of the states with relation to publicly owned utility enterprises.

Statements Are Challenged

"The result is that in practically every instance where an assertion is made by the proponents of public ownership that a given municipal enterprise is highly profitable, efficient and successful, the statement is promptly challenged on the score that the accounting system permits of a successful concealment of at least a part of the cost of operation with the result that a false statement of conditions is given to the public.

"One very important feature of this lack of certainty as to the financial effect of municipal ownership and operation of a public utility service is

that the citizen cannot adequately contrast the results of public and private ownership and operation.

"He can on the one hand obtain a very minute statement of the results of private operation because the state regulating authority has in its possession, as a result of uniform standard accounting, complete records of the financial operations of the companies, but on the other hand he cannot obtain such information as to the operation of his own publicly owned utility. He must rely upon the partisan statements of those who are operating the publicly owned utility service and because of the lack of proper accounting these statements are frequently erroneous and are not to be contrasted with the statements of the privately owned utilities.

Low Rates Cited

"It is a common practice to confront the citizen with a comparison of rates charged, and where the publicly owned utility rates are lower than those of the private company, to seek to impress the citizen that this is complete proof of the less costly and more efficient operation of the publicly owned utility. To those who know this is utterly fallacious, as it may well be and undoubtedly is true, that in many instances a part of the cost of the operation of a publicly owned utility is not charged in the rates but is taken from taxes either directly or through the method of having various departments of government contribute to the operation of the utility with no charge against the service, the result being that the public rates do not reflect the actual overhead cost.

"There are instances in California where practically no overhead charge whatever is made against the publicly owned utility service and the entire overhead is carried by the citizens through taxation, and yet these same citizens are told that they are receiving a service at a cost reflected in the low public rates and which is profitable to the community.

"I am not here arguing for or against the policy of obtaining the cost of producing the publicly owned utility service out of taxation but I do insist that the actual facts of publicly owned utility operations be ascertained and given to the public so that the public may determine for itself the matter of policy.

"Furthermore, it is bad policy to permit officials to conceal the facts from the public as this leads to abuses on the part of public officials in the conduct of city business.

I should say there is no more dangerous condition in government than one which permits of concealment of the actual facts of the conduct of public business.

Effect of Politics

"Surely no honest public official who asserts that his municipal enterprise is successful should hesitate for a moment to submit to the most rigid test of standard accounting in order that this be ascertained—in fact he should welcome and insist upon such a showing. It would seem that the simple statement of the wisdom and necessity of proper and standard accounting by municipal enterprises should be sufficiently persuasive and yet we find a very substantial resistance to the establishment of such accounting systems.

"Discarding any question of dishonesty, this can only be accounted for by the extremely partisan and controversial attitude on the part of those who are conducting a municipally owned public utility service. Apparently in the fear that if the actual facts are frankly stated to the public, advantage will be taken by the enemies of public ownership to injure the enterprise, resort is had to concealment and subterfuge. It would seem to be a perfectly logical, reasonable and sound proposal that the state through some agency which is skillful in this matter (such as the utility commission) should establish a standard system of accounting to which all municipalities must conform in the conduct of a public utility service, and further that at all times inspection be permitted of these public accounts so that the facts may be ascertained.

"In the debates that are now being engaged in and the discussion which is widespread of the relative merits of public ownership as contrasted with private ownership of public utility service, it has frequently and properly been said that the agency which can best do the job for the public is the one which should survive. But it is obvious that a determination to be sound must be based on the facts and in the interest of the public every effort should be made so that the facts can be accurately determined and publicly stated in order that citizens may come to an informed judgment."

In addition to pointing out the advisability of instituting a uniform accounting system for publicly owned enterprises, Mr. Edgerton has said, regarding the subjection of this type of enterprise to the same rigid supervision in all departments, now borne by private enterprise:

"State regulation of privately owned public utility service having become an accomplished fact and being now looked upon as permanent, discussion is becoming more vigorous and extended as to the wisdom of similar state regulation of municipally owned and operated public utility services. This question, of course, should be determined on its merits, free from all prejudice for or against public ownership.

"What sound objection can be raised to state regulation of municipally owned utilities? If these enterprises are sound, if they are being properly conducted, if they are in every respect successful, then those who are interested in them should welcome the opportunity for complete public exposition before a state commission trained to analyze utility operations and capable of laying down sound rules in the interests of the people. Would it not be a great satisfaction to the people of a city to know that at all times there was a wholly impartial trained body of experts under the guidance of experienced commissioners constantly available to consider complaints and with constant supervision of the activities of those engaged in operating a municipal enterprise?"

The "Dollars and Cents" Standard of Industrial Success

A Second Contribution by Mr. Leurey Explaining How the Lack of Trained Industrial Electrical Engineers in Industry is Costing the Factory Owner Unnecessary Expenditure

By LOUIS F. LEUREY
Electrical Engineer

IN addition to the two common faults mentioned in a previous article, which are direct results of the absence of trained industrial electrical engineers from industrial plants, namely, the lack of comprehensive switchboard and distribution arrangement covering the initial installation, and the haphazard system of specifying electrical equipment for purchase, there is a third and not least-important adverse condition quite prevalent in industry today. The condition, to use good electrical terms, is more negative than positive and the sin is one of omission rather than of commission. The fault lies in not making active the many potential and efficient uses of electricity in industry.

Electricity is employed in modern factories in two principal forms. First, as a motive power, and second as a medium for accomplishing industrial processes. It is principally this second type of usage that is being grossly neglected. When one looks into the present composition of industrial organization it is easy to read the answer to this neglect. Most industries were organized in earlier periods when only the mechanical engineer and the chemist were capable of developing factory processes. As the electrical industry developed the mechanical engineer naturally adopted the motor as only another but a very convenient form of driving power, and up to and including the present time the mechanical engineer has dominated the use of electricity in industrial processes. The electrical industry owes a great debt to mechanical engineering for its assistance and guidance in developing strength and durability in electrical equipment, but all unconsciously the mechanical engineer in the industrial field has been tnrottling the growth of electricity even to his own disadvantage. In the great field of industrial application of heat, mechanical engineers and industrial chemists have become enthusiastic advocates of electricity once they have been shown its real performance. Too many of them, however, dismiss it with a wave of the hand when they point out that dollar for dollar its heat content is so much less than is contained in the primary fuels, **but the answer is not written in B.t.u.'s but in dollars and cents of completed product** and this is where the function of the industrial electrical engineer is being overlooked in industry.

A glaring example came under the writer's observation where an inadequate conception of the proper uses of electricity was causing the owner a great annual loss not only through lack of the proper extension of electricity but through a still further loss in heat energy throughout the plant. This particular plant was originally steam driven throughout and the exhaust steam from engines and pumps was used in the factory process. The operating department found that they suffered considerable loss due to a surplus exhaust steam. The idea occurred to them that all they had to do was convert a certain percentage of the drive from steam to electricity. This was done accordingly; electricity was purchased from the local power company to drive the motors and the excess of exhaust steam promptly disappeared.

However, the high annual cost for power instead of disappearing, promptly proceeded to increase. The problem was finally solved by doing what the situation obviously called for, that was, to get rid of all of the mechanical prime movers that were "steam hogs" and to lay plans for an ultimate complete electrification, the energy for the motors being supplied from a large generator whose efficient prime mover supplied, without excess, the exhaust steam needed for the factory process. Due to the fact that the initial electrical layout contemplated no extension and due to a pitiable mess of inadequate wiring this entire job had to be done over with only the motors and starters remaining as salvage.

Influence of the Inspection Agencies

This summary of conditions surrounding the industrial applications of electricity would be incomplete and misleading if it did not exemplify the influence of the National Electric Code and the various safety bureaus. For a long period the National Electrical Code was the largest single influence to bring order out of chaos in the industrial application of electricity, and wherever its limited forces could reach, the owner was guaranteed at least that his initial installation was safe from fire hazard and adequate in electrical capacity as far as each single piece of equipment was concerned. Based on this knowledge many owners, not unnaturally be it said, assumed that a code job was necessarily a good job. The fallacy appeared in the fact that the code did not and could not cover the economic side of the question, so that many perfectly good code jobs were economically wrong in that they contained misapplications of equipment, inadequate provisions for extensions, or else indefensible frozen investment in oversized equipment.

In the state of California in 1917 the national code was supplemented by another regulatory body, namely, the Industrial Accident Commission. The electrical division of this commission promulgated orders, instituted an inspection service, but most effective of all adopted a missionary program which preached the doctrine of accident prevention to all branches of the electrical industry, and to the public

at a whole, so effectively that in the brief space of five years its influence can be seen throughout that state to an almost unbelievable degree. In addition to the badly needed improvement in safety conditions a better continuity of operations in factory processes has followed. In addition electrical contractors and mechanics generally have acquired a passion for neatness and finished workmanship that was formerly conspicuous by its absence. Like any movement that catches the imagination it has led to some fearful and wonderful individual efforts. The writer viewed one such effort where the array of "tinware" would have caused a sheet metal workers' convention to burst spontaneously into song. The influence, however, has been overwhelmingly for the advancement of the industry, and its limitation has been the same limitation that was imposed upon the code in that it did not and could not touch the economic problems of electrical application.

Point of View of the Owner

To those who have not the benefit of a diversified experience in industrial work it might seem that the foregoing paragraphs describe only the isolated conditions that obtain in poorly managed properties and that surely it cannot be indicative of conditions that exist in the majority of plants. How, they might reason, could such conditions exist where a manager is actively interested in every detail of his property?

In the first place, electricity is practically a new industry and has gone forward with such leaps and bounds that not all members within the industry have kept pace with it, let alone outsiders. Furthermore, much stress has been laid upon its mysterious phases and not enough on the utter simplicity with which it functions and the certainty with which it obeys the natural laws. The resulting effect upon the factory manager has been that he assumes that he cannot understand electricity, and if asked the simplest question about electricity in his factory, he will usually refer you to his electrician. Question that same owner about the process, or mechanical equipment in his factory and he will be able to give you a very accurate account of its efficiency and performance. The owner understands thoroughly what his steam is costing him because it is based on familiar units such as barrels of oil and dollars per month of labor; but, he accepts with undisguised dissatisfaction a bill which tells him that he is paying a sliding rate "based on the first 60 kw-hr. of consumption of each horsepower of demand."

Don't imagine for an instant that the average owner is not interested in electrical applications. In fact he is vitally interested. As one owner put it to the writer: "I felt for a long time that something was not right with the electricity in this factory but I could never put my finger on it." This same man had "put his finger" on many sore spots in his machinery and process work but in the case of his electrical usage he had not been educated to the point where he felt confident enough to exercise his own opinions.

In the second place, due largely to the traditions of an earlier period in the history of electricity, the factory owner is convinced that it suffers from certain inherent weakness and he is prepared to accept from it a quality of service that he would not tolerate from any other agency. He feels that feeders must necessarily "kick out" and motors "burn out" every so often and rarely concerns himself with whether the cause was preventable or not. He knows of the wonderful flexibility of electricity, and other good qualities that lead him to condone what is often a perfectly inexcusable error in application and operation. It can be readily seen how this point of view is strengthened by the actions of his own operating department or the action of men in other branches of the electrical industry who have not the courage to admit that the weakness is not inherent in electricity but is mainly in the haphazard methods of its applications and use. Many owners seem to feel that electricity is still in its pioneer period (and in the larger sense this is true) but as far as its applications to industry are concerned it is an exceedingly simple and dependable form of energy.

In the third place, the owner's viewpoint has been disturbed by unfortunate circumstances that bring him into improper contact with the electrical industry through the medium of destructive salesmanship. In this category can be included all those sins of omission and commission both conscious and unconscious by which the initiative of the owner is broken down, so that instead of actively cooperating in the purchase of his equipment he is told what to put in.

Taking advantage of the owner's declared lack of knowledge and his known lack of adequate advice, too many individuals and companies have elected to "push a line" rather than to "sell a service." Men representing specialties have magnified the importance of this device or that device to such an extent that owners have spent more time studying push buttons than they have motors. If the selection of each of these minute devices that make up the electrical network called for such painful thoughts, no wonder the owner threw up his hands and said, "Electricity is too much for me." This constant cross-fire of contending claims on every individual device that enters the broad field of electrical applications in industry has resulted in a great majority of the owners in desperation casting themselves into one of the two groups mentioned in an earlier paragraph, that is, they buy everything possible from a single house or they gradually accumulate an electrical Noah's ark.

It can be readily seen that the viewpoint of the owner as outlined in the above paragraphs is not one that promotes and achieves a completely successful electrical installation. It explains how even in a well managed industry the electrical equipment is not a thing to be proud of even though it does "live through" by virtue of its inherent ability to function even when mishandled, and it further explains how this adverse point of view is largely due to the improper contact between the electrical industry as a whole and the owner.

New Business for the Contractor in Fire Alarm Systems

The Installation of Adequate and Modern Fire Alarm Systems, Especially in Small Towns, Offers Good Opportunity for Study and Profit on the Part of Progressive Contractors

By E. R. MURRAY,
Supply Specialist, Western Electric Co., San Francisco

FIRE alarm systems for industrial plants, schools, hotels, factories, theaters, public institutions and small towns comprise a very extensive field for specialization and study on the part of the progressive electrical contractor-dealer; and in order to be of the utmost service to his community, he should look into such possibilities within the field adjacent to his place of business, bearing in mind that it is his particular office to invite inquiries and discussion on the subject. By a little direct-by-mail advertising, or by personal canvass, it becomes a simple matter for the contractor-dealer to identify himself as an expert in this branch of electrical work, and this procedure will uncover the most unexpected results in the way of prospects and actual contracts. Many merchants and factory owners would welcome information and suggestions concerning more adequate or more up-to-date fire alarm equipment, and no one is better fitted than the contractor-dealer to perform this function.

It is highly important that the situation be analyzed and that the correct fire alarm system be installed. A system which is too complicated, or elaborate for the needs, becomes a dangerous nuisance and very often a costly one. The simpler the system the more ideal and positive it is, but this does not mean that comprehensiveness and detail should be sacrificed for the sake of slight additional cost or for the efficacy of performance under emergency. Before taking up some of these systems in particular it may be well to offer a few suggestions and remarks concerning the general field of fire alarms.

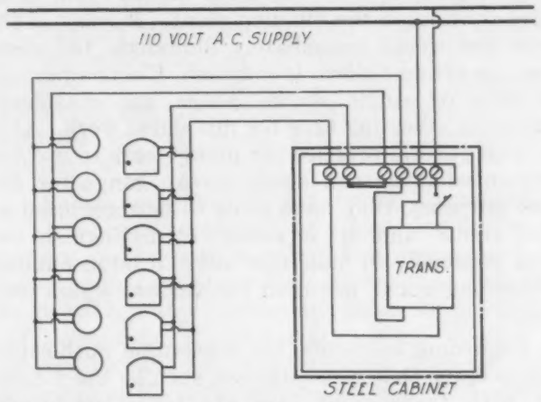
Different Alarm Systems

For factories, warehouses, industrials, freight terminals, the straight closed circuit system is recommended, employing electro-mechanical bells and mechanical boxes, for the reason that the system is always under test, and any break in the lines would cause a single stroke on all the bells, and also ring the trouble bell in the central station. This system might also be considered for schools which are so small that they do not maintain a principal or where there is not some person in charge at all times, located at a central point.

For larger schools, maintaining principal with staff, colleges, public institutions, hotels and theaters, either a double closed circuit system or a centrally controlled open circuit system is recommended. The double closed circuit system or the "pre-signal" system, is one which is so designed that should a box be pulled it would result in ringing 1, 2, or 3 bells only, located at central points. For example, in a large hotel, the first alarm would ring a large bell in the office, one in the engine room, and possibly one in the engineer's quarters. This would call the fire brigade (there usually being a trained brigade in all buildings of this kind), which would proceed immediately to the point indicated. Should the fire be of such proportions that the brigade cannot cope with it, and it become necessary that the guests be alarmed, a second operation of the box by any member of the brigade will sound a general alarm on all the gongs in the building, thus informing all the occupants of the fire. This system is a fully closed circuit system and the entire wiring and apparatus are under test at all times.

Centrally Controlled System

The centrally controlled open circuit alarm system, employing either single stroke or preferably vibrating bells, would consist of an annunciator at the central point, common break-glass boxes throughout the building, and a set of vibrating bells sufficient in size and number for the purpose, located



Design of an alarm system suitable for a warehouse having 110-v. alternating current, where house current may be used for operating the gongs. This is an open circuit system, and when the lever is pulled, repeats the alarm four times. This type has the advantage of low initial and upkeep cost, but is not under electrical supervision and there is no indication whether the system is inoperative.

at proper points. Bells are usually mounted directly above the alarm boxes or stations. Upon the breaking of the glass at any station, it would cause the number of that station to indicate on the annunciator at the central point, cause the annunciator bell to ring continuously, and where desirable to have extension of bells, it would also cause the extension bells to ring continuously. It would then be within the power of the person at the central point to operate, by means of small switches at the bottom of the annunciator, or at close range, any or all the bells to alarm occupants and clear the building.

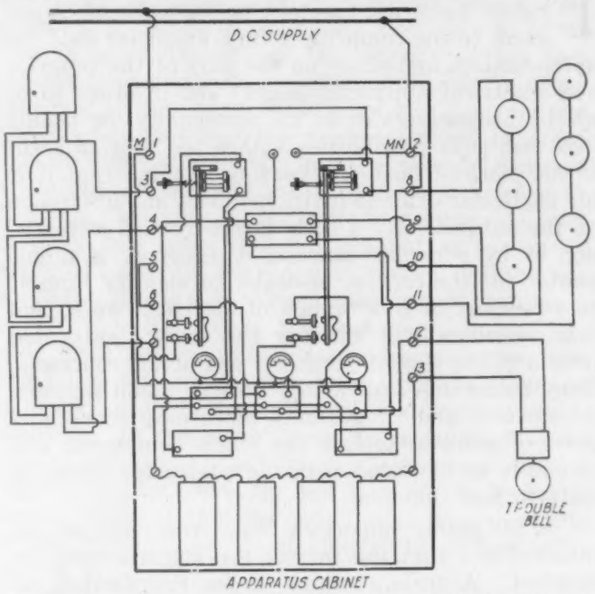
It has not been considered good practice to install in public institutions, hotels, or theaters, a sys-

tem in which the operation of a box would ring all the bells and alarm the entire building, as many alarms are false, and the emptying of such buildings would cause great inconvenience and might be attended with serious results. In smaller hotels, however, where there is no night staff, there is no alternative, and the general alarm must be sounded. In theaters and department stores the question of panic is one which must be carefully considered. In the theater, a system which will sound bells not too large in size, on the stage, under the stage, in the fly gallery, in the office; as well as the displaying of lamps of either special coloring or grouping, in the auditorium itself, in order to convey the information to the ushers and employes who are supposed to attend to the exits, has been considered the best system to meet the conditions.

Department Store Systems

There is some difference of opinion concerning the most suitable system for department stores. If a system employing single stroke bells is used, a closed circuit system is recommended. Bells should not be too large in size, but sufficient in volume of sound to warn the employes. The alarm alone is inadequate. There should be a well planned and practiced fire drill, so that all the employes can act as ushers, and lead the patrons to the nearest exist. The alarm system should be supplemented by exit signs which would be illuminated when an alarm was turned in; these signs to be fed from some source other than the building plant. A relay in the alarm line would immediately illuminate the signs when the general alarm is sounded. Electro-mechanical bells or single stroke gongs are considered superior to vibrating type for fire alarm work. As it has been general practice for many years to use the electro-mechanical and single stroke gongs for fire alarm purposes, they have come to be recognized as a fire signal, and it is easier to distinguish the alarm, especially in buildings where a large number of vibrating gongs are used for various signal purposes.

Regarding batteries, fire prevention authorities seem to agree that wet batteries, such as the Edison type, with transparent jars, are to be preferred. This type of battery works most efficiently on closed circuit. Dry cells should never be considered for fire alarm circuits except on a "trouble bell" circuit, and these should be tested periodically. A milliameter should be in the wet battery circuit to indicate the condition of the battery at all times. If this is not done the batteries may run to such a low amperage that the relays will release and cause a false alarm. A periodical inspection of the milliameter will prevent this. Storage batteries may be used, but only in places where they will receive attention by some one who is familiar with their operation and maintenance. A great deal of care should be exercised in installing sufficient battery; that is, to furnish sufficient ampere capacity so that the drain will not be excessive, necessitating the renewal of the elements too frequently. It will be found economical, in most cases, to install two sets of cells in **multiple-series**, thereby increasing the life of the battery approximately two times. The number of cells in **series** should be sufficient to give the required voltage to overcome the line and relay resistance, and the correct number of cells must be determined for each particular installation. This battery question is the most important item in any alarm system, and nearly all cases of subsequent trouble can be traced to the neglect of proper battery provision at the time of installation. In all



Wiring diagram of a pre-signal electrically-supervised closed-circuit code-ringing system, suitable for hotels or apartment houses. It derives current from a storage battery, but may be equipped to use 110-v. direct current from a lighting circuit. There is a constant flow of circuit through the bells and pull boxes, but not enough to operate the system. When a box is pulled the resistance in the circuit is cut out and the gongs are connected directly across the 110-v. mains, during the instant the box circuit is open. By a separate make-and-break system for each box, a code is established, the mechanism alternately opening and closing the circuit.

cases it is safest to secure battery recommendations from the manufacturers of the apparatus or from their representatives. Relays are wound to different resistances for performing various functions, and it is highly important that they receive the right amount of current and no more. This is especially true in a circuit where more than one relay is functioning—the one dependent on the other. Therefore, it follows that the manufacturers are best fitted to make battery recommendations, and these should be strictly adhered to in order that correct results may be obtained.

While there are several systems suitable for small towns, each having its particular advantage and mode of operation, a model system would cost about $3400 and embody all of the desirable features of town protection. The system recommended is a closed circuit and electrically supervised, and would operate somewhat as follows. When a box is pulled a coded signal is given on the gongs at the central station, the number is registered and an electric siren sounds the code of the box pulled. When one box is pulled the operation of another box will not interfere, but will sound in succession, a jumbled signal being impossible.

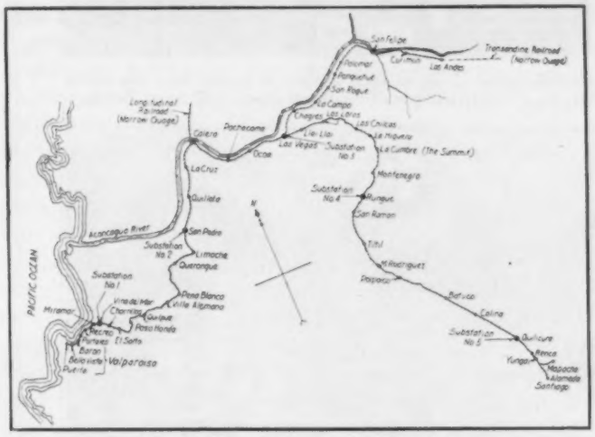
Chilean State Railways are Electrified

Details of Electrification of 134-Mile Stretch for Which Orders Have Been Placed in the United States

THE largest and most comprehensive single order for electrification equipment ever received in the United States was that recently placed by the Chilean government with the Westinghouse International Company.

The total railroad mileage of Chile is 5,200, of which about 30 per cent is privately owned, mainly for mining and industrial enterprises. The remainder of the mileage is divided into two general classes, the broad gage lines and the narrow gage lines.

The conditions that arose during the recent World War brought very forcibly to the attention of the railroad management the necessity for electrifying the broad gage lines, especially the Valparaiso-Santiago line with the Los Anges branch, where traffic was rapidly approaching the track capacity.



Map of the first zone to be electrified

In addition, fuel costs were excessive while the almost limitless water power was going to waste.

Study of Existing Electrifications

In 1918 a commission was appointed to study the problem of electrifying the broad gage lines. This commission, consisting of Rafel S. Edwards and Ricardo P. Solar, made a careful analysis of electrifications all over the world. As a result of the possible economies shown in the report of this commission, it was decided immediately to electrify the broad gage lines beginning with the Valparaiso-Santiago and Los Anges branches, or the first zone. A loan of $10,500,000 for this purpose was authorized and was heavily over-subscribed a few hours after offering.

144 Miles in Initial Electrification

The initial electrification will include 116 miles from Valparaiso to Santiago, and 28 miles from Los Vegas to Los Andes. The maximum grade in this zone is 2.25 per cent, encountered in approaching La Cumbre (the summit) from the west. The line contains a relatively large number of curves, the maximum being 10 degrees. The track gage is 5 feet 6 inches. There are six tunnels on the main line, the longest, the San Pedro, being 1600 feet in length.

The 3000-volt direct-current system was decided upon as best suited to the conditions. Hydroelectric power will be generated at the Maitines Station of the Chilean Electric Tramway & Light Co., Ltd. This station is already under construction and will utilize the waters of the Rio Colorado. The station

A 13-car passenger train on the Chilean state railways

will contain three 8125-kva. Westinghouse generators and will have an ultimate capacity of 30,000 kw. This power will be transmitted 37 miles to Santiago by twin circuit 110,000-volt transmission lines and will be generated at 50 cycles, 3-phase. These transmission lines will be connected at Santiago with the system fed by the Florida hydroelectric station and the Mapocho steam station, both of which were constructed some years ago by the Germans and were designed for 50-cycle, 3-phase power. The total capacity of the three generating systems at present proposed will be, when completed, approximately 120,000 kw.

Substations Provide for Traffic Expansion

The power supply will be distributed by five substations designed to handle a train movement that is approximately 50 per cent greater than that existing in 1917, with a further provision for tripling the 1917 demands, if necessary. Each station will initially contain two Westinghouse 2000-kw. motor generator sets, each set consisting of a 2800-hp. driving motor, and two 1000-kw., 1500-volt generators connected in series. These sets will be designed to withstand a 200 per cent overload for five minutes without injury, and as an additional safeguard a flash suppressor will be included.

Contract Includes 39 Locomotives

Thirty-nine electric locomotives are required for the initial electrification, including 6 express passenger, 11 local passenger, 15 road freight and 7 switching locomotives.

The express passenger and road freight locomotives will be equipped with regenerative braking, in its most modern development. The service in which the local passenger locomotives will operate will not require or justify the regenerative braking feature.

The fact that this contract includes only the first railroad zone indicates the magnitude of the electrification project which Chile has undertaken.

Business Districts of Western Metropolitan Centers

One of a Pictorial Series Featuring Interesting Applications of Electric Service, Advances in Home, Industrial and Power Construction and Noteworthy Developments in Western Progress

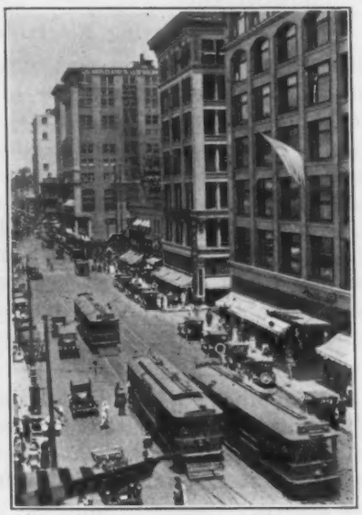
A bird's-eye view of the business district of Portland. This enterprising western city is planning a world's fair in 1925.

Looking north at the business district of Seattle, busy metropolis of the Pacific Northwest, from the 42-story L. C. Smith Building.

A panoramic view of the business section of Salt Lake City is imposing as viewed from the City and County Building.

Market Street, San Francisco, the main artery of traffic in the city by the Golden Gate, looking toward the Ferry Building from the retail shopping district.

Hastings Street, Vancouver, which is the center of commercial activity for the west coast of Canada. The new rule of the road will be inaugurated with the new year.



West Seventh Street, Los Angeles, in the retail shopping district. This city has been rapidly forging ahead in industrial growth, especially in building records.

Self Improvement in Salesmanship

A University Study Course for the Man who Meets the Public in Every Line of Business

By WILLIAM A. RUSSELL
Professor of Sales Management, University of Washington
Educational Director, Northwest Electric Service League

INTRODUCTION

Salesmanship is the art of persuading people to acquire the things which the salesman wants to sell. Efficient salesmanship is the art of achieving this by the use of methods which consume the least time and effort on the part of the salesman.

There is no magic, no mystery of any sort to efficient salesmanship. No salesman can sell every time he tries; but an efficient one will succeed more frequently than an inefficient one. This difference is entirely due to the fact that the efficient salesman has trained himself into using consistently certain ways and methods which can be readily acquired by anyone who has patience enough, and persistence enough, and common sense enough to think intelligently, to study constantly, and to work hard. Without a firm resolve to practice these three things, and without sufficient will-power to do so all the time self improvement is practically impossible.

There is one more thing about self-improvement, which we all know perfectly well, but which the business man never remembers, whereas the athlete not only uses it systematically but even bases his whole training upon it. I refer to the impossibility of measuring, or even definitely noticing, self-improvement unless there be used some record of performance against which we can measure or scale all subsequent performances.

Now, efficient salesmanship results from a systematic cultivation of a number of things that help in selling, and in the systematic suppression of a number of others which handicap in selling; how can anybody be assured that he is improving himself in salesmanship unless he prepares for himself a schedule of these various points, and records his "performance" from time to time and point by point on such a schedule?

Such schedules are an essential implement or tool of everyone who wants to grow and improve. Otherwise he cannot ascertain his weak points and will always have a tendency to lay the greatest stress on those of his characteristics and abilities which are well developed, and to fool himself into slighting his weaknesses.

As a matter of fact, this general rule can be laid down for the kind of every-day work we are all engaged in:

Steady growth and improvement comes not from adding to our strengths, but from decreasing our weaknesses.

As a chain consists of a number of separate small links, so salesmanship is built up of a number of separate elements. And just as the strength of a chain is determined entirely by its weakest link, so the effectiveness of a salesman is limited by those elements of his art in which he is weakest.

The elements of salesmanship are all extremely simple. They are all built up from every-day experiences of every-day people. None of these elements require any special knowledge or preparation —nothing but common sense and systematic attention to business.

The present study course of Self-Improvement in Salesmanship offers in systematic form a schedule of all the vital elements of the art of selling, and indicates why each of these elements has a direct influence on success or failure in making a sale. By a proper, conscientious and unrelenting use of this schedule every salesman can attain a high degree of selling efficiency.

Simply to read through this study course without a systematic use of the offered schedule as a record for self-observation and self-grading will be about as helpful to a salesman as it would be to a sick person to read through the label on the medicine bottle prescribed by the physician.

The Service Principle in Selling

Before going into a detailed discussion of the elements of salesmanship it is necessary to devote attention to the broad moral principle which underlies all efficient selling work in our days.

There was a time—and not so very long ago, either—when all selling was conducted on the basis of: "Let the buyer beware!"

Even our laws recognized this as the basis of all trading, and called this the principle of "caveat emptor." To put it in a very blunt way, this meant substantially that the seller could use every trick of the trade, misrepresentation, cheating, even straight-out lying, to put over his sale; and that any profit which he could get away with under this method of selling was his,—legitimately and morally so.

In the course of the last few decades, under the influence of better education and of a clearer appreciation of the merchant's place in human society, this principle of olden times has been entirely replaced by its exact opposite, the principle of the seller's responsibility for the statements he makes in selling and for the goods he sells.

Today it is taken for granted that the average buyer does not know merchandise as well as the seller, and that the seller's position with regard to the buyer is that of an adviser. And only insofar as the seller renders this advisory service to the buyer in an efficient way—from the buyer's standpoint, of course—does the buyer (and that means the whole community) recognize the right of the seller to be compensated for his work in the form of profit from trading.

Once the idea is firmly grasped that a merchant is entitled to profit only in proportion to the service he renders to his customers—and this idea cannot be very well denied in the face of the unrelenting efforts of modern merchants to build up a high degree of "confidence" on the part of the buying public,—it follows necessarily that the salesman as the merchant's representative and agent, to be successful, must apply exactly the same service principle in his own work.

How to Attain Successful Salesmanship

We can draw the following practical conclusions as to what successful salesmanship is based upon and how it can be attained:

Successful salesmanship is the art of serving people through persuading them, by methods which consume the least time and effort, to purchase things which will give them lasting satisfaction.

Successful salesmanship requires a conscientious and thorough study in detail of every one of the four basic components of a sale, namely.

1. The salesman himself
2. The goods offered for sale
3. The buyers of the goods
4. The process of selling.

Successful salesmanship can be attained only through a systematic effort toward self-improvement by:

1. Perseverance in hard work
2. Training in the use of common sense
3. Habit of constant study
4. Persistent elimination of weaknesses
5. Constant self-checking by points on a schedule of the vital elements of salesmanship, similar to the one given in the present study course.

A woodpecker with ideas on railroad management recently held up an express train between San Francisco and New Orleans. A block signal ahead which suddenly dropped red forced the engineer to stop. After some delay an investigation was made, and it was discovered that a red-headed woodpecker, one of the busy kind that builds its nest in the tops of telegraph poles in the mesquite country had become interested in the signal and had pecked away the lead wire to the track relay post just east of the signal. As the block signals automatically order "stop" when anything happens to the mechanism, the result was highly successful from the woodpecker's point of view.

Commerce Department Aids Exporters

Electrical Equipment Division Strives to Act as Non-Partisan Foreign Sales Department for Electrical Industry

ENDEAVORING to look upon itself as a non-partisan general foreign-sales department for the electrical industry of the United States, the Electrical Equipment Division plans to build up its service on that basis. The scope of its work has been broadly divided into three phases: (1) statistical; (2) foreign standards and practice; (3) sales service.

The statistical service that is being developed consists of world directories of all classes of electrical enterprises, the compilation and maintenance of information concerning leading foreign electrical manufacturers with, if possible, their outputs, and the furnishing of current information regarding the electrical trade of the world.

The work which this division contemplates in regard to foreign standards and practices is the maintenance of complete information regarding electrical practice, standards, and restrictions in the various countries of the world. This data will include both the printed rules and regulations of various foreign markets, and all the available current information concerning the practice and standards in common use.

The sales service which is being rendered American manufacturers consists of several activities. One phase consists in bringing to the attention of manufacturers and exporters of electrical goods the definite inquiries for specific American goods from foreign buyers. Some of these are in the shape of trade opportunities forwarded by American consuls or by the offices of the bureau in foreign countries and consist mainly of inquiries for smaller lines, although apparatus and construction projects are sometimes involved. For the larger work, however, plans and specifications are oftentimes secured through foreign representatives of the Government and are sent directly to those firms which are in a position to bid on the work in question.

One feature of this service is the checking of the translation into English of foreign specifications where the original accompanies the translation submitted by the foreign representative.

Another form of sales service, apparently appreciated very much by manufacturers who have no direct representatives of their own abroad, is the assistance given in establishing connections with local houses in foreign countries. Another feature is a record that is being developed of new important projects that are proposed in various countries. These are followed through from the time that they are first talked of until they are either abandoned or carried out, so that manufacturers may be advised as to the status of specific enterprises on which they may wish to submit bids when they feel certain the project will be carried out. All possible means will be employed to develop the service of the Electrical Division for the specific needs of the industry.

Increasing Production in Industry

Shortcuts in Management and New Power Applications That Have Reduced the Cost of Manufacturing Processes or Increased the Rate of Production. Ideas and Suggestions by Practical Men.

Batteries Reverse Voltage at Low Temperatures

When storage batteries or dry cells are cooled down to 170 degrees below zero Centigrade, the temperature of liquid air, these producers of electricity may reverse their voltage. This is the scientifically startling phenomenon that has been discovered at the Bureau of Standards, Department of Commerce, by two physicists, G. W. Vinal and F. W. Altrup, who were making tests to determine the reliability of batteries at arctic temperatures. So far as is known, this is the first time this phenomenon has been observed.

But while the voltages shown under the sub-arctic temperatures are reversed and remarkably large, no hope is held out that storage batteries can be recharged by the simple method of cooling them to the low temperatures. The currents at these low temperatures are vanishing small, and practically they hardly exist, the tests showed. Just now the battery charging stations need fear no low-temperature competition.

The knowledge of the behavior of cells at low temperature will prove useful in the case of flying at high altitudes where temperatures approach those of the arctic regions.

Electric Welding Prevents Tieup in California Refinery

The importance of having some agency for making quick repairs to indispensable machinery in an industrial plant, whether large or small, was recently demonstrated in a southern California sugar refinery when the entire plant was threatened with a complete tieup for an indefinite period when a gear weighing two tons broke down.

A portable electric welding apparatus, part of the plant equipment, however, made the necessary repair between noon of the day on which the fracture occurred and the following morning. The important function which electric welding performs is being demonstrated in many other cases.

A railroad bascule lift bridge at Long Beach is being repaired with such an outfit. The gear rack to which the strains during raising and lowering are transmitted is being welded to its supporting base because the previous rivet fastenings would shear and work loose.

Electric welding received much favorable publicity and attention during the world war. Especially was this true in connection with the repair work on the interned vessels which had been maliciously damaged in the belief that a broken valve chest would require an entirely new cylinder casting.

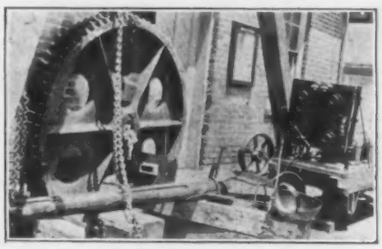
THIS DEPARTMENT

will be devoted to a discussion of practical problems of industrial operation and management. Readers' requests for information will be published in each issue, together with the answers to previous questions. It is hoped that readers will take full advantage of this opportunity to profit by the practical experience of others and to give others the benefit of their own discoveries. Space rates will be paid for answers which are published.

Many other important working mechanisms were thought impossible of repair. Had this been true the replacement would have been a matter of months or a year to clean up the damage. Due to the inherent characteristics of the electric weld different parts were welded in place without the necessity of pre-heating or the stripping of parts that other forms of welding require. Then too, the danger of warping or cracking is minimized by this form of weld. The repair work on the ships was quickly and economically done and the knowledge so gained is serving a useful purpose in the industry of the country today. Particularly in the West where the manufacturing centers are far removed from the oil fields, or the mines and quarries, electric welding is fast becoming recognized for its superiority over any other method. The advent of electric welding in the western industrial field is taking place so quietly that many who should call on this new branch of the electrical industry fail to do so through ignorance of its usefulness and economy. As a consequence much machinery finds its way into junk piles and contributes to the waste in industry.

C. K. CHAPMAN.

Los Angeles.



The breaking down of this two-ton gear threatened to tie up a southern California sugar refinery indefinitely. It was repaired in the plant yard in eighteen hours with a portable electric welding set.

Protecting Mine Trolley Wires to Prevent Accidents

Trolley lines used in connection with electric haulage in mines are a source of danger, and many lives have been lost by men accidentally coming in contact with the wires. Usually the wires in metal mines are sufficiently guarded to prevent men from touching them with their person or by pieces of steel which they may be carrying on their shoulders while walking along the level. However, it is difficult to guard effectively the wires at loading chutes along the haulageways, and despite safeguards, chute trammers have been electrocuted through loadihg bars that accidentally touched the trolley line.

To overcome this danger, the Calumet & Arizona Mining Co. formerly used a hinged V-shaped trough made of 1-in. x 6-in. lumber, that was dropped over the wire in front of the chute, when the cars were being loaded. This arrangement interfered with the easy operation of the chute, and a cutout device for the trolley line was devised. This cutout is efficient, easily constructed, and does not interfere with the operations at the chutes or with the motors.

When the cutout is open the electric current is carried past the gap by an insulated wire on the opposite side of the drift. A hinged board drops down over the ends of the trolley guard when the slide is open and prevents anything from touching the live wires.

The cutout is simple in construction and consists essentially of a section of ¼-in. rod that slides back into a 6-ft. length of ½-in. pipe, both of which are a part of the trolley line. When closed, one end of the rod remains in the long pipe, at the set back of the chute, and the other end fits into a 6-in. length of the set ahead, and both ends have enough bearing to make proper electrical contact. Standard electric equipment is used in the mine, and as the trolley-wire hangers will not fit the ½-in. pipe, a ¼-in. rod is welded on top for clamping it in place. The motors run past the cutouts with no interference.

When the cutout is closed, it is guarded by two ½-in. x 6-in. boards, as elsewhere. The free end of the rod and guard boards are fastened together by an open rectangular piece of ½-in. x 3-in. iron. The trolley rod is hung from the top of the iron by insulated hangers, and the guard boards are bolted to the sides. The boards slide back in brackets outside of the regular guards. Occasionally, in wet places, enough current leaks through the insulators to the boards of the cutout to shock a man, and to prevent this, insulated knobs are placed on both guard boards for handling.

Electricity has been profitably used in southern California for raising young turkeys. By using electrically heated brooders on the ranch of Peter B. Kyne in the Perris Valley, the mortality rate was cut to 32 per cent, a very low figure.

Electricity Used in Raising Turkeys in California

It may be a far cry from your Christmas turkey to electricity but in southern California it has been demonstrated that the two are profitably inter-related. At the ranch of the California Hotel Farm Company and the Sierra Vista Ranch, owned by Peter B. Kyne, noted California author, in the Perris Valley, electrically heated brooders are used for raising both chickens and turkeys.

Figures for the latter ranch, which is managed by O. H. Cash, show the economy of this type of installation as well as the profits to be derived by the rancher. A year ago Mr. Cash built a brooder house and runway to accommodate 2500 turkey chicks. The house was equipped with four electrically heated hovers, the heating unit of which was an all-steel coil underneath the top and near the outer edge of the hovers. Heating was thermosatically controlled and in addition a no voltage and low temperature alarm was installed. Twenty-two day-old turkey chicks were placed in the brooder house in March and fifteen hundred were marketed for the holiday trade. This is equivalent to a mortality rate of approximately 32 per cent, a very low figure for turkeys.

The amount of electricity used for lighting the runways and heating the brooders was 2737 kw-hr., equivalent to a cost of $165.68 for the entire season. The cost per turkey was approximately eleven cents.

At no time during the hovering period did the young turkeys suffer from cold, although at times the out-of-door temperature was as low as twenty degrees Fahrenheit. A temperature of 93 degrees could be maintained in the brooder at all times.

The Sierra Vista owners are so well pleased with the results obtained from the installation that they expect to increase the size of the plant next year to accommodate 7500 chicks.

Electricity is also used in adding to the production of the rancher in the case of lighting chicken houses and runways. During the late fall, winter and early spring months electric lights are used to awaken the hens long before daybreak and induce them to work overtime. This practice was first started at Arlington, near Riverside, and has been generally adopted by poultrymen. It is claimed that this procedure greatly increases the egg output.

E. B. CRIDDLE, General Agent.
Southern Sierras Power Co.

Mine Bureau Studies Coal Problems in Northwest

Coal-washing Difficulties of Oregon and Washington Analyzed Through Cooperation of Government and Universities

Since one-fourth of the coal produced in the United States is used in industrial and other power plants and since coal is one of the chief fuels used in steam plants, the U. S. Bureau of mines has been conducting a series of tests on coal-washing problems in Oregon and Washington. In Seattle these tests were carried on at the Northwest Experiment Station in conjunction with the University of Washington, while those in Oregon were made in cooperation with the State Bureau of Mines and Geology.

Representative samples of run-of-mine coal from a number of mines were tested by screening, the float-and-sink method, and laboratory washing equipment, to determine the distribution of ash impurities from the clean coal by washing, and the degree to which the quality of the coal may be improved. At the same mines samples of all washery products were tested by the float-and-sink method to determine the effectiveness of the washers as cooperating, and possible improvement of their effectiveness by the float-and sink method of control. Many supplementary laboratory tests were made with an experimental jig and coal-washing table to determine the possibility of improving the quality of the washed coal and decreasing the loss of good coal in the washery refuse, by the use of improved coal-washing methods and equipment.

In cooperation with the mining companies the coal washeries at Issaquah, Grand Ridge, Ravensdale, and Wilkinson, in the state of Washington, and at Beaver Hill, Ore., have been studied. All experimental work, except the supplementary laboratory tests, was done in the plants.

The principal results of the tests show: (1) The raw coal as it comes to the surface contains much bone, shale, and clay, most of which must be removed before the coal is marketable; (2) the present washeries are inefficient, the washed coal containing avoidable impurities, and the refuse containing an excessive proportion of good coal. Proper adjustment of the washers not only improved the quality of the washed coal but also greatly reduced the loss of good coal in the refuse; (3) by rearranging present flow sheets and replacing many old machines now in use with improved coal-washing equipment, the practice at each plant could be greatly improved.

Since the completion of these studies, two coal companies have remodeled their plants and another company has started work on a new plant to replace its present one. Based largely on results of experiments by the Bureau of Mines, one mine is building a table-washing plant to treat a pile of refuse amounting to more than 1,000,000 tons, estimated to contain approximately 200,000 tons of recoverable coal of coking quality.

Tests of the froth-flotation process, now widely used in concentrating various ores, showed that clean coal can be separated from ash in material passing a 20-mesh sieve or finer. A great many coals, however, contain bone, or bony coal, in which the carbonaceous matter is so intimately mixed with ash that 200-mesh grinding does not separate them. As the bony coal is not as easily floated as the clean coal, retreating the froth concentrate of coal yields clean coal, the bone forming a "middling." By the use of this method 95 to 98 per cent of the carbonaceous matter in the coal can be recovered in the concentrate and middling, and from 30 to 70 per cent of the ash discarded as tailing.

City of Los Angeles Salvages Old Pipe by Welding

Old two-inch boiler tubes were used by the County of Los Angeles to support wire fencing, forming an effective dike to protect stream banks from erosion by storm waters. The length of pipe was limited by the height of the leads of the small power driver and by the difficulty of driving in the boulder strewn washes. The cut-off pieces and odd lengths that accumulated as the work progressed, served to keep the crews going during a temporary shortage of this material. These pieces, averaging 4 and 10 ft. in length, were welded by an oxy-acetylene outfit.

Two men made 103 welds per 8-hour day, providing 88 lengths, 14.5 ft. long which was sufficient to keep the driving crews going. The welder worked for 50 days and made 5150 welds on 64,000 ft. of pipe at a total cost of $752.50 or 1.2 ct. per foot. About 20,000 ft. of this pipe would have been almost a complete loss to the county so that this salvage alone covered the cost of the work. The tubing weighed about 1.85 lb. per foot and was bought from the railroads for 7 ct. per foot. The cost of welding was as follows:

	Cost per 8-hr. day.	Per weld. Ct.	Per 100 ft. Ct.
Rental of welding outfit	$ 2.00	2.0	15.9
Labor—Welder $6, helper $3.50	9.50	9.2	75.5
Supplies—			
½ tank oxygen	1.75	1.7	13.9
½ tank presto	1.50	1.4	11.9
2 lb. ⅛ in. rods	.30	0.3	2.4
Total cost,	$15.05	14.6	$1.20

Western Dealer, Jobber and Agent

Business building suggestions for the store — Distribution and warehousing methods — Advertising and sales promotion ideas

Misinterpretation of Guarantee Causes Servicing Troubles

Misinterpretation of the manufacturer's guarantee on electrical products is responsible for a large proportion of "come-backs," in the form of servicing troubles, according to an article in a recent number of "Royal Breezes," the house organ of The P. A. Geier Company, which points out that it is a mistake for the salesman to make sweeping statements about the warranty.

Intent wholly upon getting the order, the salesman, when he is asked about the guarantee, often replies, "Why, madam, if this appliance ever gets out of order, all you have to do is to call us up on the telephone, and we will have a man right out to fix it. We guarantee it absolutely."

The customer accepts this at its face value, and then when the small son of the house sticks a carving knife into the motor to see what makes it go, or when a careless servant lets the cleaner fall downstairs, the dealer is expected to make good all damage without quibble or question.

Careful reading of the guarantee would show that the manufacturer promises to be responsible for any defects in material or workmanship—nothing more. No one except the purchaser is accountable for accidents, abuse, neglect, or damage due to tinkering with the appliance. This should be made perfectly clear at the time of the sale, if later misunderstanding is to be avoided. Intelligent use of the guarantee makes for good feeling and better business, but misinterpretation of it is a trouble-breeder.

Questionnaires Aid Company to Learn Salesman's Attitude

As a plan of educating salesmen on the talking points of a certain washing machine, the company evolved a series of questionnaires which were placed in the hands of each salesman and demonstrator to be answered. The company had discovered that misleading statements were being advanced as sales arguments by some of the salesmen and that many of the others were unfamiliar with the advantages of the washing machine. When the answers were submitted, the weak points of the selling arguments could be determined and strengthened.

Included in the list of questions were the following:

1. How is the washing machine oiled?
2. In demonstrating the machine, do you straighten out the clothes in the tub, or do you throw them in any old way?
3. Do you rinse the clothes in hot or cold water?
4. Do you impress on the customer that hot water is the vital thing?
5. What kind of soap do you tell your customers to use?

Merchandising $30,000 Worth of Electric Lamps

Los Angeles Store of Newbery Electric Corporation Has Record Growth in Lamp Department During Five Years

Merchandising $30,000 worth of lamps a year is a large order, especially when the number of individual lamps represented by this amount is taken into consideration. Conservatively speaking, the figure represents approximately one hundred thousand lamps. Yet the lamp department of the Los Angeles store of the Newbery Electric Corporation during the past five years has grown from a $600 annual contract business to a point where the sales for 1921 will run into five figures.

In remodeling the store this fall, $5000 was expended for a special service and display section for the growing lamp department. This expansion was necessary to handle the store sales alone since the total business is equally divided between counter sales and contracts among mercantile establishments. Special lamp salesmen are constantly acting as illumination advisers, making tests and demonstrations and otherwise assisting the customer in securing the best possible lighting service. Counter sales are filled directly from the shelves while contract and large orders are filled from stock in three hours or less. Sufficient stock is carried at all times to meet emergency demands as well as the normal trade in all types and sizes of lamps.

According to D. D. McFarlane, sales manager, the idea of promptly carrying the store service to the customers seems to be a very important factor in maintaining such a lamp department and contributes largely toward the increase in contract business which they have shown from year to year.

The records of sales to merchants prove that better standards of illumination are being introduced. One of the reasons given for this is that more careful buying on the part of the public has meant a keener competition among merchants, with better lighting used as one of the attractions to bring trade to the stores. Intensive sales efforts in calling the attention of merchants to the new 25-watt blue lamp for outdoor display lighting has been one of the chief business builders for the Newbery store. Similar campaigns have tended to popularize each new development.

The growth of the lamp department of this store to a point where it represents such a volume of business is but an example of what high pressure effort will do to increase business. Specialization on one line of merchandise in addition to the regular trade is as applicable to the contractor-dealer as is specialization in education in this era of experts.

One of the window displays used by the Los Angeles store of the Newbery Electric Corporation which aided in setting the record of lamp sales amounting to $30,000 during the past year.

Western Contractor-Dealers Progress During the Year

Past Twelve Months Featured by the Opening of New Establishments in Principal Western Cities, which Demonstrate the Increasing Popularity of Electrical Appliances

The above illustration shows the San Francisco store of the F. E. Newbery Electric Co. where appliances and phonographs are merchandised.

The picture on the left shows the F. A. Clarke Good Housekeeping Shop, an appliance store in the highest rental district in Los Angeles.

Below is the new store of the C. P. Scott Electric Co., Portland, one of the progressive contractor-dealer establishments in Oregon.

Below is depicted the imposing front of the new Denver store of Cahn-Foster, successful Intermountain district contractor-dealers.

Salt Lake Store Uses Wheel of Fortune in Window Display

Capitalizing upon that trait of nature which urges man to take a chance, the Walker Electric Company, Salt Lake City, recently installed a novel window display, the popularity of which kept large crowds constantly in front of the store.

J. S. Walker, Jr., originated an electrically propelled "wheel of fortune" which was operated by a foot treadle placed on the sidewalk in front of the store. The wheel consisted of a large

Window display of the Walker Electric Company, Salt Lake City, which consisted of a "wheel of fortune" operated from the outside. An appliance was given free of charge to any person spelling its name on the wheel.

disc with the letters of the alphabet printed around its edge. The pointer was a large wooden arrow, spun by the foot treadle, which came to a stop at one of the letters. A large card in the window invited the passer-by to try his luck in attempting to spell the name of some one of the electric appliances displayed in the window. If he was lucky enough to spell the name of a device, it was given to him free of charge.

The element of chance connected with the display not only attracted large crowds but emphasized the various appliances shown in the window. At the same time, it was instrumental in building up good will.

The feasibility of conducting an electric appliance store in a large public market has been demonstrated in Los Angeles by E. Pierson Tyler of Los Angeles. When the new California Public Market opened last spring, he reserved a small space for display purposes. In conjunction with this he directed an aggressive house-to-house campaign. Recently he leased four times the original space in the market and on December 12 opened a holiday sales campaign in a completely equipped kitchen, breakfast room and living room, furnished with every conceivable convenience for the housewife in the way of electrical appliances.

It takes a skillful salesman to talk free service to an intelligent customer without violating any of the principles of good salesmanship.

Sales Letters Are Real Business Getting Mediums

Denver Gas and Electric Company Secures New Business Through Original and Forceful Personal Letters to Prospects

By JOHN T. BARTLETT
Boulder, Colo.

As merchandising aids for the electrical contractor and dealer, sales letters possess several special virtues. They are more personal than the publication advertisement—each individual letter goes from the contractor or dealer to a single addressed person, in the privacy of an envelope. They enable the user, because he can prepare a careful list, to concentrate on just the type of prospects he wishes to, thus reducing selling expense while increasing results. They are flexible, because they can be prepared and put into the mails on only a few hours' notice.

It is, however, as easy to waste money on sales letters as on any other kind of selling effort. The list must be a good one. Then the sales idea must stand scrutiny as something which genuinely contains appeal. Finally, the letter must be composed with close regard for the act to which it is designed to persuade.

The Denver Gas and Electric Company is constantly using sales letters as a means of bringing more business. It uses them because actual cost data has proved that it is profitable to do so. Frank Kivel, advertising manager of the company, is the author of a series of three letters which have brought in more than $2000 in new business during recent months. Nor have the effects of these letters worn off, for cards are still coming into the offices of the company. Three letters on the subject of wiring cost respectively, $29.84, $68.49 and $24.49, or a total of $122.82. The cost includes compilation of lists, typing, cost of stock and mailing. Accompanying the letters were self-addressed postcards with a blank form on the back of which the housewife was asked to fill out. As proof that the effects of these letters has not worn off, cards are still coming into the offices of the company.

The first letter follows:

Dear Mrs. Stone:

There are three reasons why I wish you would read this letter:

1. Because I don't want you to go another day without electricity; without the benefits of up-to-date lighting and fixtures—without the comfort and convenience of electric time, labor and money-saving appliances.
2. Because the cost of wiring your home for electricity is so low today that you should no longer deny yourself this necessity.
3. Because I feel sure you will let me call at your convenience, let me make an estimate at no expense to you, show you that it won't disturb your household routine to make the change and what a great improvement it will make in your home.

Won't you please fill out the enclosed card and oblige

Yours sincerely,
W. E. McCOURT,
Representative.

The second letter also dealt with wiring but the appeal was highly original. The letter follows:

Dear Mrs. Laws:

All the people who wear glasses don't live in Boston.

Notice how many "Four-eyes" there are right here in Denver. And this can't be blamed on the glare of the sun—most of it is due to **eye strain.**

Eye strain from reading and working in **poor light.**

Why not wire your home for electricity, save your eyes and enjoy the advantages of electrical appliances, thereby saving time, labor and money?

Why not wire your home for electricity when the rates are so low that the most modest home can afford it with six months to pay?

Kindly fill out the enclosed card and let me call on you at any time you suggest, make an estimate of the cost of wiring your home and show you how it can be done cheaply, satisfactorily and without the slightest inconvenience to you.

Sincerely yours,
W. E. McCOURT,
Representative.

The third letter was equally appealing and proved a good business bringer. It follows:

Dear Mrs. Augurman:

To correct a wrong idea some people may have given you, I wish to tell you right away that:

1. Wiring your home for electricity isn't going to disturb your comfort. Your walls and floors won't be torn to pieces. Our skilled workmen do the job quickly and neatly.
2. It isn't going to cost you a lot of money. Electricity is low in price—anybody can afford it. With electricity you enjoy the advantages of **good** lighting and electrical appliances.

Won't you let me call at any time you suggest and give you an estimate on the cost of electric wiring and fixtures?

Just fill out the enclosed card.

Sincerely,
J. A. MILLER,
Representative.

As electrical sales letters, this trio are models. They are brief and readable, interesting, personal, and each one contains a cleverly constructed appeal. The benefits of electric wiring are convincingly touched on. The present notably thrifty mood of the public is respected in the references to low expense—one letter goes so far as to say, "Six Months to Pay." The idea is combatted that the work of installation will be an excessive annoyance—it is stated, "Our skilled workmen do the job quickly and neatly."

And finally the return postcard accompanies, self-addressed, with convenient blanks helping the prospective customer to indicate first the date, and then the hour she would like the company representative to call.

All of the letters were written on stationery of the Denver Gas and Electric Company and all emphasized the personal note, beginning "Dear Mrs. ——" rather than "Dear Madam." The letters do not attempt to completely sell. Rather they attempt to carry the recipient along to the point where she will ask a company representative to call. The company has found that this is a large part of the selling battle. It also aids them in concentrating on prospects who are actually desirous of doing business rather than attempting to uncover good prospects by haphazardly canvassing an entire district.

Activities of the West

A Business Man's Department Devoted to Events and Developments in Western Industrial Centers—Including News of Interest to Readers in Public Utility, Industrial and Trade Fields

Port Terminal for S. F. Bay

Bids Called for First Unit of Two Million Dollar Structure

Initial steps toward providing San Francisco with one of the most modern and efficient water front transit sheds in the United States have been taken by the State Harbor Board by advertising for bids for the construction of the substructure, 1000 ft. long, extending along China basin. The work to be done under the first contract consists of the construction of a seawall and wharf.

Bids will be opened January 12 and it is expected that the work will be completed before the end of 1922. It is estimated that the preliminary structure will cost $800,000. The entire improvement will cost in excess of $2,000,000.

Filling and dredging for the new wharf will provide 250,000 square feet of land for industrial sites with both rail and water connections. The warehouse which will be erected as soon as the wharf is constructed will provide 190,130 square feet of wharf-shed space and 326,400 square feet of warehouse space. It will be six stories in height. By the use of revolving, semi-portal electric cranes, it will be possible to handle material directly from the ship and the first, second and third floors. Electric whip hoists and conveyors will serve the three upper floors. Three depressed tracks will be placed behind the building.

J. H. McCallum, president of the Harbor Board, declares that the new terminal will establish a port warehousing system on San Francisco Bay which will rival anything in any port in the world.

Portland Ordinance to Regulate Electrical Retail Dealers

Regulation of retail stores selling electrical supplies in order to prevent inferior material being sold is provided for in an ordinance which will come up for passage before the city commissioners of Portland soon. After an investigation made by L. W. Going, chief electrical inspector of the city, it has been conclusively shown that many small retailers are selling electrical supplies of inferior quality. The material does not comply with the specifications of the building code and is considered objectionable because it tends to increase the fire hazard. The terms of the ordinance provide for a license fee from all dealers in electrical supplies. Cancellation of permits granted is the penalty for selling material not coming up to the specifications of the building code.

Oldest Colorado Light Plant Installs New Machinery

The first electric light plant to be built in Colorado, that at Buena Vista, constructed in 1887 at a time when Denver was using gas for lighting, recently changed its system from a 230-volt direct current installation to a 110-volt alternating system, having been the last plant in the state to make the change. It is interesting to note that the first installation comprised a Heislor series direct current unit which was changed to a 500-volt system in 1895, following the construction of a large smelter at Buena Vista. Later the system was changed back to 230 volts.

Washington Crops for 1921 Are Valued at $157,014,950

According to figures given out by the Federal Bureau of Crop Estimates, and furnished to the Seattle Chamber of Commerce, Washington's 1921 crop production surpassed in value that of 1920 by more than $9,000,000. The 1921 production reached a total of $157,014,950. Production for last year was valued at $147,698,000. Wheat production led the state's products of the year, with 51,000,000 bushels. Next came the apple production with 25,474,000 bushels. Between 4,000,000 and 5,000,000 acres of land in Washington were planted in crops this year, and the outlook for next year is for a much increased acreage, as private and public reclamation and irrigation projects develop.

Pole Line Construction to Be Investigated in California

Standards of construction of overhead electric transmission lines will be investigated by the California Railroad Commission at a hearing to be held in San Francisco on January 16. All electric, telephone, telegraph and railroad utilities and all others including municipalities operating power and signal lines are cited to appear at that time and show cause why the present state law applying to pole lines should not be complied with. This law was passed in 1911 and gave the utilities five years in which to bring the old construction up to the standards established by the law. An amendment in 1915 gave the Railroad Commission discretion as to the time when full compliance must be made. The hearing is to determine whether full compliance should not now be required. The law was designed to effect safety measures for the public and especially for electrical workers. All new construction, since its passage, has complied with the law.

Utah Leads in Electricity

Farmers in Intermountain States Use Most Power Figures Show

Utah farmers enjoy the comforts of electrical conveniences to a greater extent than do farmers of any other state in the Union, according to a report of the United States Department of Agriculture, which was read recently at a meeting of the agricultural committee of the Salt Lake Commercial Club. Utah heads a list showing the percentage of farms in the various states which use gas and electricity.

The table shows that 11,125 Utah farms, or 34.4 per cent, use either gas or electricity. Massachusetts is second on the list with a total of 28.3 per cent. While 30,519 farms in California are benefited, this is only 25.9 per cent of the total number of farms, and the state ranks third. Idaho is twelfth; Nevada fifteenth; Colorado twenty-ninth, and Wyoming thirty-third.

Necessity for developing the agricultural industry in Utah through colonization was discussed at the meeting by D. D. McKay, of Huntsville, president of the Utah State Farm Bureau.

Mr. McKay spoke of the advantage of cooperation of commercial organizations with the farmer, and congratulated the Commercial Club upon the activities of its agricultural committee.

Fire Destroys Lighting Exhibit in Los Angeles Building

Electrical interests of Southern California were heavy losers in a fire in the Los Angeles Chamber of Commerce building which recently destroyed a lighting exhibit which had been installed in the structure after months of accumulative work. The exhibit, which was used for the instruction of high school classes and industrial organizations in effective methods for artificial lighting, was valued at $3000. It had been collected and installed by the electrical fraternity and the California Electrical Cooperative Campaign.

The flames also destroyed motion picture films valued at $5000, in addition to damaging the building to the extent of $20,000. The fire started in the projection room where pictures of the farming section of Kern county were being shown. A spectacular touch was added to the disaster when firemen carried hundreds of people to safety by means of aerial ladders.

Over five miles of transmission lines have been strung from the new Shoshone hydroelectric plant near Powell, Wyo., according to a recent announcementof the U. S. Reclamation Service.

Denver Building Records Reach Record High Mark

Denver is breaking more building records this year. With 5,500 building permits, representing a value of $9,700,000, issued by the city building department up to December 15th, the prospects of a $10,000,000 building year are excellent.

The value of permits issued so far in 1921 has been exceeded but five times in the history of the city. The years when other records were established are: 1899, value of building permits, $10,807,377; in 1890, $12,835,394; in 1908, $10,098,020; in 1909, $11,553,983; and in 1910, $11,319,955.

The feature of the building this year is the large number of homes constructed. The housing shortage became so serious that a wave of residence building started in the spring and continued throughout the year.

During the first eleven months of 1921 a total of 735 permits for brick residences were issued by the building department. These homes are valued at $3,496,500. For all of 1920 only 333 brick houses, valued at $1,917,000, were constructed in Denver.

The number of frame residences for which permits were issued also broke previous records. Up to December 1, permits for 652 frame houses, representing a value of $937,350, were granted. For all of 1920 but 93 frame residences, valued at $127,859, were constricted in the city.

Denver stands twentieth in a list of forty-four representative American cities with a population of more than 100,000 for its 1921 building program, according to a comparative statement issued by the civic development department of the Chamber of Commerce of the United States.

Anaconda Copper and American Brass May Consolidate

The American Brass Company will be merged with the Anaconda Copper Company if preliminary steps which were taken at a recent stockholders' meeting of the former concern in New York are consummated. The brass company has until February first in which to decide whether it will turn over 51 per cent of the stock for $150 per share together with three shares of Anaconda stock. With the Anaconda stock valued at $50 per share, the deal will involve approximately $45,000,000.

The American Brass Company is the largest single consumer of copper and zinc in the world and the Anaconda is the largest single producer of these two metals. The American company, during its peak year, produced forty per cent of the country's entire output.

It is rumored in New York that this merger will bring about a consolidation of the Utah copper interests.

Shipyards on San Francisco Bay launched more than 190,000 tons of ships during 1921, according to figures prepared by the Oakland Chamber of Commerce. Twenty-six vessels were constructed during this period against 27 for the preceding year. The 1920 total was 242,500 tons. The list for 1921 includes three of the largest merchant vessels ever constructed on the Pacific Coast, 15,000-ton tankers.

Peak of Public Utility Rates Definitely Passed

California State Railroad Commission Reviews Utility Situation in Letter of Transmittal to Governor

The peak of public utility rates has definitely passed and the decline has set in, according to a letter to Governor W. D. Stephens from the California State Railroad Commission which accompanies the report of the commission for the fiscal year ending June 30, 1921.

The commission declares that the advance in utility rates during the war and the reconstruction period was relatively small as compared with soaring commodity prices, and in this connection says the contrast between regulated and unregulated business is illuminating and "of itself would be sufficient justification, if justification were any longer needed, for the enlightened policy of state regulation." It is shown that if public utility rates had been advanced equally with commodity prices, the people of the state last year alone would have paid in the neighborhood of $100,000,000 more than they did, to the public utilities. The commission gives detailed figures to support this conclusion, as follows:

Turn Toward Normal

The turn toward normal, the commission states, came near the close of the fiscal year, about last May, and adds:

> The Commission was quick to announce that the period when increases were generally justified had definitely passed. In several decisions it was made plain that the peak had passed and the policy was publicly enunciated that the Commission would look with disfavor upon applications for increased rates, save in exceptional cases, where it could be unmistakably shown that unusual conditions warranted special consideration.

Discussing rate reductions and rate investigations under way, the commission informs the Governor that a basis for rate adjustments will soon be established for all the large power companies of the state. This will mark another definite advance in the program of effective regulation, the letter says. Continuing the commission tells of this work, as follows:

> In the latter part of the year under review both electric and gas rates were reduced, and there is every reason to hope that the trend toward normal will make further reductions possible. Electric rates, which during the period of shortage and war demand, were held to within 35 per cent of pre-war schedules, are now only 25 per cent in excess of 1913 figures—something that can scarcely be said of anything else that the farmer, the merchant or the householder has had to buy in the past seven years. Specific reductions were made in the rates of the following electric utilities, covering northern, central and southern California: Pacific Gas and Electric Company, 8 per cent; San Joaquin Light and Power Corporation, 5 per cent in its agricultural rate and the Southern California Edison Company 12 per cent. In the case of the Southern California Edison Company, and the Southern Sierras Power Company, definite valuations have been completed and a permanent basis for rate purposes established. The same kind of valuation work, undertaken for the northern companies has been completed and is ready for presentation at hearings now under way. As a result of these hearings, a working rate-base will be determined for the Pacific Gas and Electric Company, the Great Western Power Company of California and the San Joaquin Light and Power Corporation. When this work shall have been completed a comprehensive basis to govern rate adjustments will for the first time be available for all the chief power companies in California. This will mark another definite advance in the effective regulation of public utilities in this state. Rates it should be remembered, for most of the large electric companies were in effect before the Public Utilities Act conferred jurisdiction over them upon the Railroad Commission, and hence the work of the Commission in this regard, has been confined largely to modifications in specific instances.

The assertion that regulation tends to hamper industry is declared by the commission to be a fallacy, and it points out that the public utilities under regulation are keeping pace with the rapid growth of the state. This is especially true in the development by the power companies of the hydroelectric resources of California's mountain streams. Describing this work, the commission says:

> Extensive hydroelectric development work is now under way to meet the needs of the present and immediate future, while nearly all the large power projects make provision for the ultimate development of power far in excess of that provided for in the units under actual construction. This once more illustrates the fallacy of early objections to regulation that it would tend to stifle industry. On the contrary the facts show that regulation fairly applied to rates, service and securities, not only protects the consumer and the investing public, but permits the utilities to develop and to discharge their full duty of meeting the requirements of a rapidly expanding industrial and commercial commonwealth.
>
> During the year the work of harnessing the mountain streams and turning to useful purposes the state's inexhaustible supply of "white coal" has progressed satisfactorily, while still greater projects loom in the not distant future. Hydro plants of a total kilowatt capacity of 145,500 and steam plants of 47,500 kilowatt capacity were completed and the current tied into the existing distributing systems. Not including preliminary work, there is under construction new hydro plants with a capacity of 146,000 kilowatts. This development is being carried on by the Pacific Gas and Electric Company on Pit River and tributaries, to make available 103,500 kilowatts; the San Joaquin Light and Power Corporation, bringing in 10,000 kilowatts at Kern Canyon; Southern California Edison, increasing its Big Creek production by 22,500 kilowatts, and the Southern Sierras Power Company, preparing to produce 10,000 kilowatts at its Levining Creek plant.

Shingle Manufacturers Ask High Protective Tariff

At the fifth annual convention of the Red Cedar Shingle Congress, comprising the shingle branch of the West Coast Lumbermen's Association, held in Seattle December 7-8, resolutions favoring a protective tariff on Canadian shingles sold in the United States in competition with the American made goods were adopted. In adopting the resolutions, the shingle men put their stamp of approval on the shingle clause of the Fordney bill, providing for a tariff of 50 cents a thousand on shingles. Shingles manufactured in Canada, and often by Oriental labor, it was pointed out, are now entering the United States duty free and competing with those made by American labor at a higher cost. The following officers were elected: E. E. Case, Raymond, Wash., president; Col. R. H. Hartley, Everett, vice-president; R. S. Whiting, Seattle, secretary. E. C. Miller of Aberdeen is the retiring president.

The Southern Idaho Land and Power Company is planning the installation of two generating units two miles south of Weiser, on Crane creek, capable of producing 20,000 hp. for irrigation purposes. A reservoir having a capacity of 70,000 acre-ft. will be constructed. W. R. Robison of Portland is the manager of the company.

Hoover is Chairman of Colorado River Commission

First Duty of Body Will Be to Decide Whether Development Will Be Done by Federal Government or Private Interests

Whether the Colorado River will be developed by the Federal godernment or by private interests will be one of the first questions to be decided by the interstate commission which has been authorized by Congress, according to an announcement from the Department of Commerce, confirming President Harding's appointment of Herbert C. Hoover, Secretary of Commerce, as chairman and federal representative on the commission.

The announcement from Washington covering the appointment of Secretary Hoover follows:

"The creation of the Colorado River commission is the first step in what promises to become one of the greatest of our national improvements, involving a term of years and an expenditure of several hundred millions of either public or private funds. Each of the states of California, Arizona, Nevada, Utah, Colorado, Wyoming and Montana is interested in the irrigation and power to be derived from the river, and considerable conflict has already developed. Unless the river problems are considered as a whole there is likely to be a grent waste both in water and power, through private or public grabbing or ill-considered plans, with much conflict both between the states and with private interests.

"The land under irrigation in 1920 from the river and its tributaries amounted to about 2,464,000 acres in the United States, and 190,000 acres in Mexico. If the river were equipped with proper storage dams the amount of irrigated lands could be increased to about 6,123,000 acres in the United States and 800,000 acres in Mexico.

"There is practically no power developed on the river at the present time, but it has possibilities of development of 6,000,000 horsepower as an incident to development of irrigation storage. Some of this horsepower is urgently needed at the present time in Southern California and Arizona. The progress in long distance transmission will yet bring this entire volume of horsepower into possible national use.

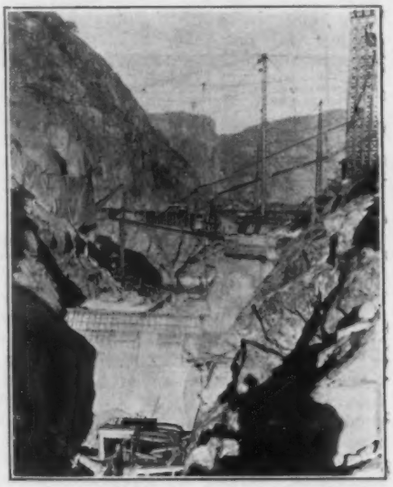
"One of the large problems of the river is the constant threat of the lower river to break through its banks and to flood the Imperial Valley, where something like one hundred million dollars' worth of property is at stake. Such a break occurred a few years ago and it cost several million dollars to restore the river to its normal channel.

"In order to secure a definite control of the flood waters and systematic development of its power possibilities, and give maximum storage for irrigation, the river must be considered as a single problem in the interests of all the states of the nation. If such a coordinated long-view plan is worked out it is anticipated that enough water will be available for all the land available to the river and enough power for all of the community. It is the duty of the commission to determine a plan for such development and to make recommendations to Congress. A number of private concerns are anxious to undertake the development of the power and water. The municipalities of Southern California are also offering to undertake various projects. One of the first questions before the commission will be to determine whether the construction of the dams along the river should be undertaken by the Federal government or whether they should be allotted to these different interests. In any event, whatever program is undertaken, it must be determined from the point of view of the coordinated whole and with view to the greatest national benefit.

"The irrigation service advocates that the first construction should be a dam about 600 feet high at Boulder Canyon, in Arizona, costing about $40,000,000, which would give an initial amount of upwards of 600,000 primary horsepower. This dam would increase the irrigated acreage in the states of Nevada, Arizona, California and Mexico by 1,300,000 acres, and would give such flood control as would protect the Imperial Valley from destruction by a break in the river banks."

Hetch-Hetchy Dam Is One-Fifth Completed

The Hetch-Hetchy dam, one of the units of the project which will ultimately furnish San Francisco with an abundance of water from the high Sierra, is gradually taking shape. Located on the Tuolumne river, in Tuolumne county, the dam will ultimately rise 312 feet above the stream bed. Present plans call for the construction of a dam 226.5 feet above the stream bed. The base of the dam is 118 feet below the stream bed, giving the dam, when completed, a total height of 430 feet.



View of the Hetch-Hetchy Dam which will furnish water and power to the city of San Francisco. The dam was approximately one-fifth completed when the picture was taken. Seventy thousand cubic yards of concrete had been poured.

When the accompanying picture was taken 70,000 cubic yards of concrete had been poured and the dam had reached a point equal to the height of the stream. When completed the dam will contain 370,000 cubic yards of concrete.

Foreign Trade Conference Held in Pacific Northwest

The adoption of a more aggressive foreign trade policy, discussion of various phases of Northwest commerce, passage of resolutions and the election of officers to the permanent trade body, comprised the program placed before the delegates in attendance in attendance at the Pacific Northwest Foreign Trade Conference which was held in Tacoma, Washington, on December 15 and 16.

The sessions were held in the Commercial Club rooms, Tacoma Building. There were 300 delegates in attendance, comprising bankers, steamship owners, operatives, importers, exporters, manufacturers and manufacturers' representatives.

Following the formation of a permanent organization, the following officers were elected to serve during the ensuing year: William Piggott, Seattle, president; C. P. Bishop, Pendleton, Oregon, vice-president; B. F. Stone, Astoria, Oregon, vice-president; J. J. Donovan, Bellingham, Wash., vice-president; E. P. Kemmer, Tacoma, secretary, and E. G. Griggs, Tacoma, treasurer.

The resolutions adopted by the delegates at the conference included the following:

We are emphatically in favor of an American merchant marine and believe that the best interests of foreign trade of the Pacific Coast will be subserved by government aid to the American merchant marine by modifying existing laws and in the equalization of operating costs in such way as will enable successful competition with the vessels of foreign flags operating in Pacific Ocean trade. The strong reason therefor is that we on this coast are in a formative state of foreign trade relations. Assistance must be given until trade routes and markets are established and the business made profitable.

We urge the United States Shipping Board to give all possible cooperation towards the establishment of regular service of steamships equipped with refrigeration for the transportation of perishable products.

The need of additional and improved facilities for communication between the Pacific Coast and the Orient is imperative. The practice of cable companies in making a charge of three times the normal rate to give normal service imposes an intolerable condition on Pacific commerce. The handling of cable mutilations on some basis similar to the custom before the war is essential to the conduct of trade from this coast.

Southern California Edison Asks For Rate Reductions

The Southern California Edison Company has filed application with the California Railroad Commission for new lighting schedules which will reduce the maximum rate from 9 cents per kilowatt-hour to 8 cents. The schedule, if granted, will take effect January 1 and will apply to 160,000 consumers outside the city limits of Los Angeles. The city council has jurisdiction of rates within the city limits and a separate agreement for charges is in effect there. Vice-President S. M. Kennedy, in announcing the application for new rates, states that increased efficiency of labor has made the reduction possible. He also anticipates that investigations now under way will result in the near future in recommendations for further adjustments in rates, particularly to agricultural and industrial consumers.

Salt Lake City Seeks Sites For Reservoirs

Filings have been made with Dana Parkinson, supervisor of the Wasatch National Forest, by Salt Lake City for two reservoir sites in Big Cottonwood canyon. One site takes in the Reynolds flat and the other is in the vicinity of the Argenta mining property. These filings are for the purpose of materially increasing the city's water supply.

It is estimated by the United States Geological Survey that the annual runoff of Big Cottonwood creek is approximately 60,000 acre-feet, largely in the spring. Specifications for the conserving of this water in the two sites filed on have been prepared by Ralf R. Wooley, hydraulic engineer of the survey, and call for the construction of a dam at the Argenta site 250 feet high, between 1100 and 1200 feet long at the top. This, it is estimated, would store in the neighborhood of 16,000 acre-feet of water, which is more than four times the amount now used by the city. The other dam would be approximately 200 feet high and would store about 12,000 acre-feet.

$12,000,000 Merced Bond Issue For Irrigation Carries

Twelve million dollars in bonds has been voted by Merced, California, for financing an irrigation project which will furnish water to 180,000 acres of semi-arid land and add a 40,000-horsepower hydroelectric plant to the San Joaquin valley district . The power will be sold to the San Joaquin Light and Power Corporation. The project includes the construction of a dam 300 ft. high on the Merced River near Exchequer which will impound 250,000 acre-feet of water.

Work on the project will begin shortly after the first of the year as all legal steps necessary were taken before the bond election. It is planned to complete the dam and power house within two years. The detailed estimates covered by the $12,000,000 issue follow:

Construction of dam, $3,763,000.

Relocating and rebuilding 20 miles of Yosemite Valley Railroad, $2,043,000.

Construction of distribution system, $1,688,000.

Purchase of Crocker-Huffman irrigation system, $2,250,000.

Power plant, $2,000,000.

Purchase and installation of 100 drainage pumps, $200,000.

Portland Electrical Interests Stage Range Campaign

The electrical contractors and dealers of Portland in cooperation with the local power companies, feeling that the price of electric ranges had reached a sufficiently low level to encourage the public to buy, put on an active range campaign early in November. A price slightly above cost was agreed upon on all types of ranges and a flat price to cover the inside wiring was made and prices quoted on ranges installed either with or without inside wiring. A feature of the campaign is the sale of the ranges installed complete including inside wiring on a deferred payment plan. An initial payment of $35.00 down is required and the balance is payable in monthly installments, in many cases as low as $10.00 a month.

The underlying scheme of the campaign is that the power companies buy the ranges in large quantities and the dealers receive them on consignment and are paid a stipulated commission on each sale. Wiring for ranges sold by the power companies is equally distributed among the dealers participating in the campaign. Cooperative advertising by the dealers and the power companies is carried on in the local newspapers.

The Pacific Gas and Electric Company has commenced work on improving the water supply of the city of Redding, Cal. The work, which will cost between $40,000 and $60,000, calls for the rerouting of the mains, the improvement of the reservoir and the installation of a filtration plant.

Bureau of Mines engineers are examining the development work on a deposit of lignite near Reno, Nev., with a possibility of determining whether the deposit is available, after briquetting, as a domestic fuel. It is also hoped that it may be used as a power fuel in plants in the vicinity of Reno.

Utah Supreme Court Upholds Utilities Commission

Decision in Rate Case Contested by Utah Copper Company Gives Utility Body Right to Increase Rates

The Supreme Court of Utah has just handed down a decision sustaining the order of the public utilities commission of Utah involving increased rates for power supplied by the Utah Power and Light Company to its power customers in that state. The decision of the Supreme Court is on the appeal of the Utah Copper Company from the commission's award, by review proceedings in the Supreme Court.

It was the contention of the copper company that the new rates were confiscatory, and it also questioned the jurisdiction of the commission and legality of its proceedings in general, both in the "special contract case" and in the granting of the rate increase.

In September, 1919, the commission ordered the holders of special contracts with the Utah Power and Light Company to show why these contracts should not be considered as preferential and discriminatory as against other power users. About three months later the power company applied for a general increase in its power schedules in the state of Utah.

The two cases were heard together, and the first decided in October, 1920, by which decision the commission ordered the holders of special contracts to be placed on standard schedules, on the same basis as other power customers.

This decision was appealed to the Supreme Court, and last February was affirmed, the Supreme Court upholding the right of the commission to alter the contracts in question, as to rates. The State Supreme Court's findings in this case are now pending before the United States Supreme Court.

In March, 1921, the commission decided the application of the power company for a general increase of its power rates, by allowing an increase, which increase, however, was not as great as that requested by the power company.

This latter decision was also brought into the Supreme Court by the Utah Copper Company, and has likewise been upheld, as above stated.

In his opinion, Chief Justice Corfman, of the Supreme Court, stated:

"It appears that not only is there substantial evidence in this record to support the findings of the commission as made, but the great weight of the evidence is to the effect that if the power company was to be permitted to exist as a public utility and render efficient service to the consuming public, then, temporarily, at least, it was necessary that the rates established by the commission be practically maintained. * * * *

"Under the circumstances, we find that the commission acted regularly and within the powers conferred upon it by the legislature in ordering the contract rates superseded by the regular schedule rates. Further, we are of the opinion that the contention made by the copper company that the schedule rates are unjust and confiscatory as applied to its service, has not been sustained. Aside from that, and especially as to whether the schedule rates are too high or too low, we express no opinion. In either event that is a matter to be determined by the commission alone. Until the commission has acted outside its powers, or until it clearly appears that the rates fixed by it are unreasonable or confiscatory in their effect we have no right to interfere."

Westinghouse Announces Big Order From Japan

Creation of a super-power system in Japan similar to that proposed for the area between Boston and Washington, is heralded in an announcement that the Westinghouse Electric International Company has received an order from Takata and Company, Japanese agents, for $2,000,000 worth of hydroelectric equipment to be installed by the Daido Electric Power Company of Japan, in two plants near Tokio. The current will be transmitted at 154,000 volts.

This is the second large order that the Westinghouse Electric International Company has received from Japan during the past few weeks. The first order was for switching equipment for the Tokio Electric Company and amounted to approximately $1,000,000.

Of particular importance to American manufacturers of electric railway equipment is the announcement that a fundamental policy for the electrification of Japanese railways has been announced by the official commission charged with this work. The U. S. Department of Commerce has received a copy of the report which recommends the immediate electrification of approximately 2000 miles of steam railway lines. Portions of the report follow:

(1) All sections in the suburbs of cities where there is a heavy railway traffic, such as Kyoto-Kobe, 47 miles; Kobe-Himeji, 34; Minatomachi (via Kitsu) Kyoto, 51; Moji-Hakata, 48; and Osaka-Tennoji, 6 miles.

(2) Sections of high gradient where there are many tunnels and also those where abundant water power can be utilized, such as Odawara-Numazu, 26 miles; Maibara-Imasho, 47; Hachioji-Shioiiri, 116; Nagoya-Shinooi, 151; Fukushima-Yonezawa, 26; Yashiro-Kashima, 94; Kameyama-Nara, 46; Utsunomiya-Nikko, 25; Koriyama-Niigata, 172; Oguda-Shinjo, 58; Takasaki-Yokokawa, 18; and Karuisawa-Naoetsu, 92 miles.

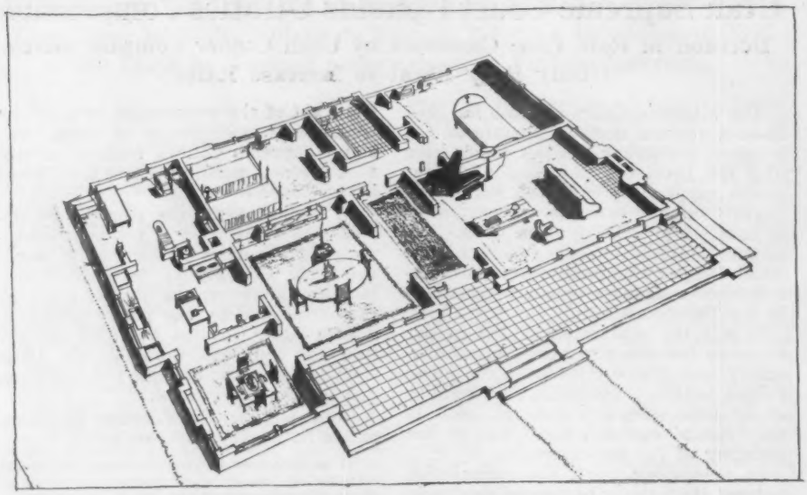
Idaho Power Companies Give Rebates to Farmers

Rebates totaling $37,467 are to be allowed farmers in Idaho using electrical energy for pumping purposes. The 1921 session of the Idaho legislature passed a law granting power companies operating in the state a rebate on taxes, and provided that the amount of the rebate be apportioned among the various irrigation power users.

In compliance with the provisions of this statute the Idaho Power Company has filed with the public utilities commission a report which shows that 18,326 horsepower is used in the state annually for pumping water electrically.

Sections of the law provide that the public utilities commission shall calculate the amount of the total rebate to be placed to the credit of each consumer. After this is done an order will be issued by the commission authorizing the power company to credit the various power users of the state with their proportion of this rebate.

The Chamber of Commerce of Manila, P. I., has sent out invitations to manufacturers, exporters and importers to take part in a carnival and commercial and industrial fair which is to be held in the Islands February 4-12.



A new four-page booklet issued by the California Electrical Cooperative Campaign contains a cut-in section of an electrical home showing the furnishings, in addition to the conventional floor plan showing the wiring details.

California Campaign Issues New Wiring Booklet

The California Electrical Cooperative Campaign has revised the original single sheet wiring diagram of an electrical home and is preparing to issue a four-page booklet designed as a practical aid to the home builder in properly equipping the home so as to be best able to use the many electrical appliances which have been designed to lighten the work of the housewife.

At a recent meeting of the advisory committee it was felt that the original plan was slightly overdone. The revised plan has been worked out with an idea of showing the minimum number of switches and convenience outlets which should be installed in a modern home.

The cover of the new booklet shows an elevation drawing of the home. The two inside pages reproduce the floor plan, one a conventional architect's drawing, the other a cut-in section, showing the furnishings and arrangement of appliances. The last page contains drawings and descriptions of the convenience outlet.

These plans will be distributed by the field men to architects, builders and realtors. Quarter cards have been issued which bear the announcement, "This House is Equipped with Convenience Outlets." These cards are placed on the front of every home under construction which has at least one outlet in each room.

The advisory committee has also started a survey of the actual cost of operating the various classes of appliances so that charts may be placed in the hands of the various sales organizations and contractor-dealers, which will show the cost in terms of money rather than kilowatt-hours.

San Francisco Firm Offers to Buy Muscle Shoals Project

The Construction Company of North America, a San Francisco firm engaged in driving the tunnel for the Hetch-Hetchy project, has made an offer to the U. S. Government for the Muscle Shoals power and nitrate project which is contended to be over one and a half billion dollars in excess of the offer made recently by Henry Ford.

The San Francisco firm, according to reports from Washington, D. C., will build its own plant, operate the properties for fifty years and pay the government one-half of the net profits. The project will be financed by bonds redeemable in twenty-five years. The Ford offer asks Congress to appropriate $30,000,000 for the completion of the project with a like sum at the end of ten years for additional developments. In return the government will receive a set sum of $2 per horsepower-year over a term of 100 years. The plant would ultimately develop 600,000 horsepower.

The government has spent $17,000,000 on the construction of the project, which was stopped at the end of the war. It is estimated that $23,000,000 must be expended before the plant can be placed in operation.

Those concerned in the Muscle Shoals venture are: C. C. Tinkler, president of the Construction Company of America; Fred C. Hitchcock, vice-president; George Perry, secretary; William F. Humphrey, attorney; J. A. McCarthy, treasurer; Alfred J. Cleary, consulting engineer, and Professor Charles Derleth of the University of California, special consulting engineer.

Journal Radio Message Heard in Washington, D. C.

The Los Altos radio station of the Colin B. Kennedy company, known as 6XAC, from which the radio telephone news and business reports prepared by the Journal of Electricity and Western Industry is sent out every Monday night, has been heard in Washington, D. C. Arthur L. Budlong intercepted both the voice and telegraph message and the report was checked by Herbert A. Wadsworth who also operates a station in the national capital. Only one tube was used and no amplifiers were used on the receiving end. The same message was also intercepted in Omaha, Neb., and Minneapolis, Minn.

Books and Bulletins

The M. W. Kellogg Company, New York, manufacturers of high pressure piping, hydroelectric lines, and welded containers of all kinds, has issued a complete and exhaustive catalog of its lines, which should prove of especial value to the consulting hydroelectrical engineer as well as to many other men in the industry. The book places at the hand of the engineer special information and data gathered by its engineers during the past years. It is divided into four sections, one dealing with high pressure hydroelectric pipe lines, another with power plant piping, a third with oil stills and the last with hammer welding. The arguments in each section are enforced with many illustrations, a large number of which are installations of the company's products.

The General Electric Company has prepared a new booklet on highway lighting units, a new field for illumination owing to the increasing amount of night travel on the concrete highways in many of the western states. Fully illustrated and covering all of the latest developments in this new field, the booklet is a valuable piece of descriptive literature for those responsible for the highways which have made the western states famous.

The Ideal Electric Manufacturing Company, Mansfield, Ohio, has issued bulletins No. 106 and No. 107, the first dealing with motor generator sets and the second with electro-plating apparatus.

McGraw-Hill Company Purchases Electrical Review

The McGraw-Hill Company, Inc., has purchased the Electrical Review, and will continue to publish it in Chicago under the name of Electrical Review and Industrial Engineer. Under the present plans, as announced by James H. McGraw, president of the company, the publication will be a practical monthly magazine devoted to the operation and maintenance of electrical and mechanical systems in mills and factories. Present subscribers to Electrical Review will be allowed to choose the publication which best suits their needs. They can continue their subscription to the new practical monthly or change to the Journal of Electricity and Western Industry, Electrical World, Electrical Merchandising, or Power.

The extra zone postage on McGraw-Hill publications to points west of the Mississippi and in Canada has been cancelled. The ruling regarding Canadian postage applies especially to the Journal of Electricity and Western Industry, Canadian subscribers now being able to purchase the magazine at the same rates as those in the United States.

Butte, Montana, through the agency of its Rotary Club and Chamber of Commerce, will hold an international copper exposition early in the year, for the purpose of demonstrating the many uses which the red metal has.

Meetings of Interest to Western Men

S. F. Electrical League Plays Host at Christmas Party

Eighty-three small boys and girls from the San Francisco Nursery for Homeless Children were given a taste of real Christmas cheer when they were guests of the San Francisco Electrical Development League at a luncheon and kiddies' party on December 19. The luncheon, with the homeless tots as guests, has become an annual affair with the San Francisco men of the electrical industry, and this season's party was voted the most successful one in the annals of the organization. Santa Claus was made to appear, being impersonated by J. S. Thompson of the Pacific Electric Manufacturing Company, and gifts were distributed to each child.

In addition to the Christmas tree and the distribution of gifts there was a musical program in which outside talent, as well as the children themselves took part.

The committee which planned and executed the party consisted of Arthur Rowe, chairman, C. B. Kenny, Grover Anderson, R. W. Du Val, Robert McDonald, E. E. Browne, W. B. Francis and H. L. Garbutt.

Eighty-three orphan children were made happy at the Christmas party given by the San Francisco Electrical Development League in the ball room of the Palace Hotel on December 19.

Utah Contractor-Dealers Elect Officers for New Year

At a meeting of the Contractor-Dealers' Association of Salt Lake City, November 16th, the annual election of officers took place, and the following were elected for the ensuing year:

E. H. Eardley, manager Eardley Electric Co., president, succeeding James Walker; Fred C. Wolters, manager Modern Electric Co., vice-president, succeeding Geo. R. Randall; G. W. Forsberg, manager Wasatch Electric Co., secretary, succeeding E. H. Eardley; L. G. Robbins, electrical contractor, treasurer.

New members of the Advisory Committee of the Rocky Mountain Electrical Cooperative League to represent the Contractor-Dealers, were chosen as follows: F. C. Wolters, L. G. Robbins, Claude R. Dodge, manager Dodge Bros. Electric Co., and G. W. Forsberg. The above new members of the Advisory Committee succeed the following members: E. H. Eardley, Geo. R. Randall and James Walker.

Thirty students of the Agricultural College at Logan have made application to the Ogden Chapter of the American Association of Engineers for a charter under which they may operate as a student club under the jurisdiction of the local chapter. The students are studying engineering. The college members will be allowed to participate in all functions of the local club and the local chapter will in return assist the collegians in all of their engineering endeavors. Several members of the faculty of the school will be included in the college chapter.

At a recent meeting of the Seattle Engineers' Club, J. W. Miller of the J. W. Miller Aircraft Company, addressed the meeting on the subject of "Aircraft from an Engineering Standpoint."

COMING EVENTS

WESTERN ASSOCIATION OF ELECTRICAL INSPECTORS
Annual Meeting—Chicago—January 17, 18, 19, 1922

PACIFIC COAST DIVISION, ELECTRICAL SUPPLY JOBBERS ASS'N
Quarterly Meeting—Del Monte, Cal.—January 25-28, 1922

LIGHTING FIXTURE DEALERS' SOCIETY OF AMERICA
Annual Meeting—Milwaukee—January 30-February 2, 1922

SAN FRANCISCO SECTION, AMERICAN WELDING SOCIETY
Organization Meeting—January 13, 1922

A. A. E. Annual Convention in Salt Lake Next June

The eighth annual convention of the American Association of Engineers will be held at Salt Lake City June 4, 5 and 6, and active work toward making the convention a success has already been started by the local officers. C. J. Ullrich is chairman of the convention committee of the Salt Lake chapter, with H. G. Harmon and C. E. Painter as his committeemen. M. D. Williams, E. E. Kidder and C. W. Cross, representatives of the Ogden chapter, have pledged the assistance of that body in making the convention a success.

It is expected that there will be at least 300 delegates present, and that most of them will bring their wives.

It is planned to make this the vacation trip of the delegates, with trips to Yellowstone National Park, southern Utah and other points.

The support of the Commercial Club and other organizations has been promised in making the convention a success. Sub-committees for the work of preparation are now being appointed.

Utah Engineers Ask Licensing of Members of Profession

The licensing and registration of all engineers in the state of Utah is recommended in the report of the legislative committee of the Ogden chapter of the American Association of Engineers. According to E. E. Kidder, chairman of the committee which made the report, the matter will be brought before the state legislature in the near future by the chapters of the A. A. E. in conjunction with the Utah Engineering Council. The report, which is a most extentive one, states:

"If people trust their affairs and property with the licensed legal man, their health to licensed doctors, their children with licensed teachers, why should there be any hesitation about placing the construction and operation of great public works and utilities with the licensed engineer? That this will appeal to the ordinary fair-minded citizen is not doubted. No practicing engineer will be injuriously affected. The full benefit of such a law will not be apparent at once, but will gradually make itself felt until the engineer and the public interest is as well protected in his case as in that of other professions."

The Synchronous Club of Los Angeles numbering among its members nearly a hundred of the electrical engineers of the city, held its December meeting at the Edison Building, Tuesday the 13th. Under the direction of R. H. Manahan of the department of electricity, the first of a series of lectures on Wiring Methods and the Inspection Service was presented to the members and the invited public.

The December meeting of the American Institute of Electrical Engineers, Seattle section, held on Dec. 10, was in the form of a trip of inspection of the U. S. S. Tennessee at the Puget Sound Navy Yard, Bremerton. Immediately following the inspection, dinner was served and the following program presented: "Main Drive," by Lieut. Commander A. M. Charlton, engineer officer; "Ship Service, Power Plant," by Lieut. Commander Hugh L. White, electrical officer; "Battery of the Tennessee," by Commander Russell S. Crenshaw, gunnery officer.

O. C. Merrill, executive secretary of the Federal Power Commission, was one of the principal speakers before the League of the Southwest at Riverside recently and later discussed the Colorado River problem before the San Francisco Engineers' Club. Mr. Merrill believes that the two fundamental premises behind such a development as

O. C. MERRILL

is contemplated on the Colorado are the flood menace in California and the creation of a super-power system, which would be the largest in the world. Mr. Merrill is thoroughly familiar with the problems which are peculiarly western for he practiced as a civil engineer in the Pacific Coast states for many years. Later he was in charge of all water powers which came under the jurisdiction of the U. S. Forest Service and in 1914 was called to Washington to become chief engineer for that department of the government. His statements regarding the Colorado development, coming as they do from one attached to that agency of the government at Washington with the full power to act on such development as that proposed for the Colorado River, must necessarily carry the force of conviction as a result of engineering experience and at the same time indicate that the government will look first to the developing agency which can combine speed, experience, and a comprehensive plan as the most desirable agency to which the first development projects will be granted.

C. E. Ingalls has resigned as San Francisco district manager for the Crocker-Wheeler Company and will shortly enter the field as a manufacturer's representative with offices in the Rialto Building. **Arthur Purdon** has been appointed to the district managership to fill the vacancy caused by Mr. Ingalls' resignation.

Otto E. Ostoff, vice-president of H. M. Byllesby and Company of Chicago, commented upon the prosperity of California following a four weeks' tour of inspection of the Byllesby gas and electric properties in this state.

J. Vipond Davies, internationally famed engineer, known to the West for his recommendation regarding the bridging of San Francisco Bay, presided at the meeting in New York when **Marshal Ferdinand Foch** was conferred an honorary membership in the four national engineering societies.

Personals

K. R. Kingsbury, president of the Standard Oil Company of California, who has recently returned to San Francisco following an extended eastern business trip, states that the general impression in the East is to the effect that business is definitely on the upward trend.

Theodore E. Burger, former Los Angeles district manager for the Western Electric Company, has been appointed secretary of the Society for Electrical Development, Inc., with offices in New York City. For two years Mr. Burger was chairman of the Los Angeles Electric Club and was one of the chief proponents of the cooperative movement among the branches of the industry on the Pacific Coast.

George L. Hoadley, former instructor in electrical engineering at Washington State College, Pullman, Wash., is now head of the department of electrical engineering in the Milwaukee School of Engineering.

Robert H. Hull, former electrical engineer for the Great Western Sugar Company of Denver, has become instructor of electrical engineering in the University of Colorado, Boulder.

Perry L. Harris, electrical engineer with the Federal Shipbuilding Company of Kearney, N. J., has resigned to become associated with the Newbery Electric Corporation of Los Angeles.

William Neiman, formerly with the Universal Gas and Electric Company of San Francisco, has taken the position of assistant superintendent of the new business department of the Pacific Gas and Electric Company.

John H. Ebaugh has left the Los Angeles branch of the Allis-Chalmers Manufacturing Company to take the position of instructor in the electrical department of the Fresno Technical High School, Fresno, Cal.

Frank Venable, assistant manager of the Montana Electric Company, Butte, has been appointed to a special committee of the Associated Industries of Montana, which has been charged with the work of extending the scope of the association until it fulfills the duties of a state-wide chamber of commerce.

G. I. Kinney, San Francisco manager for the International General Electric Company, has been elected to the directorship of the Foreign Trade Club of San Francisco, as the result of his activities in the promulgation of foreign trade out of San Francisco.

R. I. Bentley, president of the California Packing Corporation, has been elected vice-president representing California of the Association of Pacific Fisheries and the National Canners' Association.

A. M. Poindexter of the Denver jobbing house bearing his name, was a member of the Denver revolver team which made the highest score in the national contests held recently. The result of the match gives the Denver team the Winan's bronze trophy and the championship title of the United States.

Herbert C. Hoover, Secretary of Commerce and well known westerner, has been appointed chairman of the Colorado River Commission by President Harding. Secretary Hoover will be the federal government representative on the commission, which will be comprised of delegates from the seven states through which the river flows and which will be charged with the equitable distribution of the waters of the river among the states for irrigation and power purposes.

W. S. Rathbun of the electrical department of the Rocky Mountain Fire Underwriters is chairman of a committee appointed to reorganize the American Legion Posts in Denver.

Ernest R. Fellows has been appointed superintendent of construction for the Associated Telephone Company, Long Beach, Cal. Mr. Fellows was formerly with the General Electric Company as inspector of hull material for the U. S. Navy.

T. O. Kennedy, general superintendent of the Denver Gas and Electric Light Company, attended the executive committee meeting of the N. E. L. A. in New York recently.

A. E. Wishon, general manager of the San Joaquin Light and Power Corporation, has been appointed by President A. B. West as chairman of the Committee on Amendments to the Constitution of the Pacific Coast Electrical Association. The committee will have the important work of revising the constitution to meet the recent change in name of the organization, and will consider as well the various other suggestions toward broadening its field which have been brought up within recent months. Mr. Wishon's active work in the association, of which he was president during the past year, places him closely in touch with its needs and opportunities. Other members of the committee are: D. E. Harris, vice-president and manager of the Pacific States Electric Company, A. W. Childs, superintendent of sales of the Southern California Edison Company, K. E. Van Kuran, manager of the Los Angeles branch of the Westinghouse Electric and Manufacturing Company, L. H. Newbert, in charge of the Alameda division of the Pacific Gas and Electric Company, and Clyde L. Chamblin, of the California Electrical Construction Company.

A. E. WISHON

C. A. Semrad of the Western Light and Power Company, with headquarters in Boulder, Colo., is an active member of the Rocky Mountain division of the N. E. L. A. committee on public utility information and a regular attendant at the weekly meetings in Denver.

W. J. Barker, general manager of the Denver Gas and Electric Light Company, and **L. M. Cargo,** intermountain manager of the Westinghouse Company, took an active part in the Denver Motor Club's Christmas party for the poor children of that city.

Franklin T. Griffith, president of the Portland Railway, Light and Power Company, and **Guy W. Talbot,** president of the Pacific Power and Light Company, both of Portland, recently returned from Washington, D. C., where they were in conference with the Federal Power Commission together with members of the Water Power Development Committee of the National Electric Light Association, on matters in connection with the administration of the Water Power act.

H. F. Jefferson, chief engineer of the Kilbourne-Clark Manufacturing Company, Seattle, is receiving congratulations for the interesting and novel description and demonstration of the scope of wireless telephony which he gave before a recent meeting of the Seattle Engineers' Club.

Edward H. Eardley, who was recently elected president of the Contractor-Dealers' Association of Salt Lake City, is one of the pioneers in the electrical industry in that city, having grown up with it from the time he accepted the position of office boy with the Holding Electric Company. In 1906 he left that company and established a contractor-dealer business of his own, which has grown until at the present time the Eardley Electric Company is one of the most active and progressive firms of its kind in the city. Mr. Eardley has been actively connected with the Contractor-Dealer Association for the past twelve years and has served

E. H. EARDLEY

as secretary of that organization for five years. He has been an enthusiastic advocate of the cooperative idea and was one of the instigators of the movement which resulted in the formation of the Rocky Mountain Electrical Cooperative League. He has also been recently elected to the executive committee of the National Association of Contractor-Dealers.

J. A. Kahn, Robert Miller, A. J. Calloway and **B. E. Rowley** were the electrical men who took an active part in the wholesale trade trip which the Salt Lake Chamber of Commerce took to Price, Utah.

L. T. Merwin, general superintendent of the Northwestern Electric Company of Portland, is a recent San Francisco visitor, having been in that city for the purpose of conferring with officials of California power companies.

A. R. Woolley of the Salt Lake office of the Edison Electric Appliance Company, assisted **J. F. Senior,** the Denver representative of that company, in serving the Denver dealers during the holiday trade.

W. W. Hanscom, former chairman of the San Francisco section of the American Society of Mechanical Engineers, has returned from New York City where he represented the San Francisco section at the recent convention of the Society. While East Mr. Hanscom made a visit to the Bureau of Standards at Washington, the Westinghouse Company at East Pittsburgh, the General Electric Company at Schenectady and the Waltham Watch Company at Waltham, Mass. He returns enthused and greatly impressed with the splendid work that is being accomplished by the American Society of Mechanical Engineers.

R. G. Gentry, assistant commercial manager of the Denver Gas and Electric Light Company, was elected treasurer of the Colorado branch of the Gideons at the state convention recently held in Denver.

J. W. Hancock, a prominent Denver electragist, was recently elected a director of the Kiwanis Club in that city, while **Harry H. Argabrite** of the Western Electric Company was chosen district trustee.

A. J. Calloway, Salt Lake manager of the Western Electric Company, was a speaker at the Denver Electrical Cooperative League meeting of December 6th.

Carl O. Martin, district representative for the Benjamin Electric Manufacturing Company with head quarters in Seattle, spent some time investigating conditions around Salt Lake City during a recent tour of the Intermountain district.

Burton Y. Gibson, specialist on ranges and heavy duty electric cooking equipment, has been appointed Pacific Coast representative for the Walker and Pratt Manufacturing Company of Boston, makers of the Crawford Electric Range, who recently advertised that "3,000,000 breakfasts are daily cooked on Crawford ranges." Mr. Gibson represented the Hughes electric range on the coast before the Hughes interests were consolidated with the Edison Electric Appliance Company. Mr. Gibson will establish offices in San Francisco.

Harold W. Burchard has been named manager of the shipping department of Frank Waterhouse and Company, Seattle, succeeding **Percy S. Laing,** who resigned recently to engage in business on his own account. Mr. Burchard is said to be the youngest shipping man on the Pacific Coast to hold a place of such importance. He is a World War veteran, having served as a lieutenant of infantry in the famous Ninety-first Division.

George F. Nicholson, chief engineer for the Port of Seattle, has been called to Cork, Ireland, where he has been commissioned to make a comprehensive plan for the development of the harbor of that city. Mr. Nicholson has secured a six months' leave of absence from his present post, and upon the completion of his work in Ireland, will visit all of

G. F. NICHOLSON

the principal port cities of Europe with a view of gathering information which might be valuable in the development of the port facilities of Seattle. Mr. Nicholson is a native of Indiana and a graduate of Rose Polytechnic Institute in civil and mechanical engineering. During the four years following his graduation he was engaged in railroad construction work in Mexico. In 1908 he was appointed resident engineer for the Chicago, Milwaukee and St. Paul Railroad, after which he was associated with Virgil Bogue, New York consulting engineer, in planning a comprehensive development for practically every harbor in the Northwest. He joined the Seattle Port Commission nine years ago and for the past five years has been chief engineer for that body. He is a recognized authority on harbor development. He is a member of the American Society of Civil Engineers and the American Association of Engineers.

J. C. Davidson, manager of the electrical department of Hendrie and Bolthoff, one of Denver's largest jobbing houses, after attending the jobbers' convention in Cleveland, called upon a number of the eastern manufacturers which his firm represents and did not return to Denver until Christmas.

George Hemmen of the B. K. Sweeney Company, Denver, and **Carl M. Heintz,** western sales supervisor of the Westinghouse Electric and Manufacturing Company, were guests of the advisory committee of the Rocky Mountain Electrical Cooperative League at a recent meeting in Salt Lake City.

Obituary

Chester C. Doud, president of the Doud-McFarlane Machinery Company of Tacoma, a prominent figure in Washington lumber and machinery business for the past thirty years, died at his home in Tacoma recently.

The Mine and Smelter Supply Company of Denver, Westinghouse distributors, arranged a special waffle iron demonstration in the windows of The Denver Gas and Electric Light Company, which included a daily waffle-eating contest during Electric Week, Dec. 5-10.

The Apex Electrical Appliance Company, as the first stop on a western demonstration tour, had its representative, Miss Marie Carlson, conduct a window exhibition of the ironer put out by that company at the store of **J. Van Dyk** in Denver.

"Columbalite" is the name of a new enclosed semi-direct lighting fixture being made by J. W. Hancock, a prominent Denver electragist.

Nollenberger and Dorner, Denver wiring contractors, have taken over the Colorado Electric Machine Company, which is specializing in motor repair and installation work.

The B. K. Sweeney Electrical Company of Denver has proposed five and ten per cent wage reductions, effective January first, according to a notice recently filed with the Colorado State Industrial Commission. It is proposed to make a five per cent reduction on salaries ranging from $75 to $100 a month and a ten per cent reduction on all salaries over $100 per month.

The Northwestern Supply Co., 104 Prefontaine Place, Seattle, on December first changed its name to the Tri-State Electric Company. This firm deals in wholesale electrical supplies in Washington, Oregon and Idaho. The company is capitalized for $50,000 and the stock owned by A. W. Woodville, president, and F. J. Jackson, secretary.

The Apex Electric Company of Seattle recently opened a retail store at 902 Fourth Avenue under the ownership of Secord and Stusser, Inc.

Rankin and Cherrill, contractor-dealers of Vancouver, B. C., have recently opened a new store at 528 Hastings Street West. This is the second store to be opened by this company, the first being located at 55 Hastings Street West.

Manufacturer, Dealer, and Jobber Activities

M. Sweyd, western representative for Lionel toys and electric trains with offices in San Francisco, has moved from 718 Mission Street to the Furniture Exchange.

The Salt Lake City branch of the Edison Electric Appliance Company had one of the most effective holiday window displays of any in the Intermountain district. John Montgomery, the local manager, is receiving congratulations for the display, which cost approximately $400.

The Muir Electric Company has recently opened a new store at 978 Granville Street, Vancouver, B. C.

The Electric Specialty Shop, 1320 Granville Street, Vancouver, B. C., has just started a combined contractor-dealer establishment and battery service station.

The Perry Electric Company, 1150 Granville Street, Vancouver, B. C., has expanded to such an extent that a second establishment has been opened at 985 Robson Street.

Theo F. Dredge has been appointed western representative for the **Coffin Valve Company,** Boston, who have recently placed on the market the Coffin balanced needle valve. The western offices will be in the Monadnock Building, San Francisco.

The Beaver Machine and Tool Company, Newark, N. J., manufacturers of Beaver electrical specialties, have just brought out a combination switch and heater plug designed for use with all types of appliances. The device is the same size as an ordinary plug yet contains a switch movement. This newest accessory promises to fulfil a long-felt need. It is described in catalog No. G-1.

The Shipowners Radio Service, Inc., formerly located in the Kilbourne-Clark Building, Spokane Street and Marginal Way, Seattle, opened a retail store at 215 James Street, in charge of G. V. Wiltse. The firm has a large number of stores throughout the West.

The Lakewood Engineering Company, Cleveland, has announced the consolidation of its offices with those of the **Smith-Booth-Usher Company,** who will act as its exclusive representatives at 50 Fremont Street, San Francisco, and at 228 Central Avenue, Los Angeles.

Harold W. White has purchased the interest of Mr. Castello in the firm of White-Castello Electric Company of Eugene, Ore., and the firm will hereafter be known as the H. W. White Electric Company.

The Stevens Sales Company, Salt Lake City, distributors of motors, pumps, lamps, and handling a general line of such electrical apparatus and equipment of standard type, has moved to its new home at No. 134 West Second South Street, where it has more commodious quarters, including a well-equipped office and warehouse.

The Buckeye-Prima Company, Sidney, Ohio, manufacturers of electric washers, has placed on the market a new wringer which is equipped with a large soft roll claimed to do away with the necessity of tension screws, and guard roll. It is also claimed that the wringer will not injure fingers nor break buttons on the clothes. The wringer was invented by R. J. Anderson.

The Benjamin Electric Manufacturing Company, Chicago, is undertaking a direct mail advertising campaign on behalf of the dealers to aid in popularizing electric appliances. The company is also sending out to the trade an effective counter stand and window poster with interesting and valuable suggestions to customers.

The Cutler-Hammer Manufacturing Company, Milwaukee, through its switch and specialty department, announces that there has been placed on the market a new attaching device for portable electric appliances. The device provides a flush mounting and a neater looking installation than is usually possible with an ordinary surface receptacle.

The Pittsburgh Gage and Supply Company, manufacturers of Gainaday Household Appliances, by the appointment of **Albert A. Erdman** as western sales manager, is definitely preparing to enter the appliance field on the Pacific Coast in an aggressive manner. Gainaday products have not been represented for some time. Mr. Erdman will begin his work shortly after January 1st and will be located at Clark Hotel, Los Angeles, until warehouse facilities have been established. He will begin immediately to develop present dealer connections and establish new ones.

The Century Electric Company, through R. J. Davis, district sales representative, announces a reduction of ten per cent on type "SC" squirrel cage induction 50 and 60-cycle motors. The prices were effective December first.

The Electric Furnace Construction Company, Philadelphia, announces that the Ford Motor Car Company has placed an order for the largest electric melting furnace ever designed. The furnace will have a capacity of 9000 kva.

AND A NEW YEAR COMMENCES JANUARY FIRST

This is a difficult situation to comment upon. We offer Henry Cahn of the Cahn-Foster Company, Denver contractor-dealers, with a new automobile and a new wife. If the picture had not been taken in the mountains, it might also show the new store which the firm occupies. It might be said that business is picking up in the Intermountain district, as the new car and new store demonstrate. The wife,—well, we leave that to you.

Business Outlook in Western Market Centers

Reflecting the Trend of Community Thought on Conditions and Events Affecting Business and Industrial Activities Throughout the West

Compiled and edited for the Journal of Electricity and Western Industry by correspondents in all principal Western cities.

SAN FRANCISCO

Retail trade was quite brisk during the holidays. All lines of merchandise moved fairly well, and holiday trade on the whole was up to expectations. Business in manufacturing lines is quiet, and there continues to be considerable unemployment. There is a fair amount of building activity, although lumber dealers and builders, and hardware houses do not look for any great increase in trade until February. At the present time, demand for "clears" exceeds production, and prices are slightly higher. Mills are gradually resuming operations.

There is some activity in the export line and demand for space to the Orient is somewhat larger, but conditions are far from satisfactory.

Sales of automobiles have been very slow for the past month or two, and practically no used cars are moving. Dealers, however, are optimistic, believing that present conditions are only temporary, due to the holiday season. Collections continue slow.

SEATTLE

Holiday buying in Seattle maintained an extremely satisfactory level, and the volume of sales made a good showing as compared with 1920. There is no doubt that the volume of sales was slightly lessened by the serious flood conditions existing in the Puget Sound country for more than a week, and which made it difficult and in some cases practically impossible for a large number of the usual out-of-town shoppers to get into the city. The tendency of this year's shopper was the buying of practical and useful gifts, and the sale of electrical gifts, particularly household appliances, was good.

Apple shipments from the north central Washington fruit district for the season to date are now well over 11,000 cars.

Good times are also ahead for the salmon packers in this section, as stocks of all grades held on the coast are low, and it is evident from inquiries coming into Seattle during the past few weeks, requesting prices for January shipment, that buyers from all parts of the country will be in the market early in 1922.

SPOKANE

Wholesale and jobbing trades report a fair volume of business, but collections rather slow and unsatisfactory. Wholesale orders are reported more numerous, but buying is still largely confined to goods required for immediate needs. Retail trade shows some increase, but in volume does not equal that of the same period last year.

In the building line there is more activity than for the corresponding period last year. Nearly $1,000,000 has been invested in home construction in the past ten months in Spokane. Permits have been issued for 376 new houses, costing $967,655, as compared with 130 new houses valued at $492,750 during the same period last year.

In the lumber industry, there is a shortage of shop and high-grade finished lumber of the softer varieties, due to the unusual demand for house building purposes. The demand for other kinds of lumber has not kept pace with that for new houses.

The drop in the price of wheat, which has retarded the movement of that grain, is having a noticeable effect on bank deposits.

SALT LAKE CITY

The outstanding feature in financial circles in the intermountain section was the distribution of the money allotted by the war finance corporation to the sugar companies for the beet growers on November deliveries, involving a total of about $2,500,000. This will relieve to a considerable degree the needs of the farmers, and particularly the pressure on the country banks, which have depended, in turn, on the city banks for support.

The consumption of copper continues to increase, and the outlook for early resumption of copper mining operations is becoming more and more favorable. Mining operations in the silver-lead camps continue at a fairly satisfactory rate.

In local trade circles the retail merchants report business fair, with collections rather slow. Due to the favorable weather conditions in many localities, and the consequent building activity, the lumber and hardware business is reported to be good.

Electrical appliances are moving fairly well, as a result of intensive sales work and advertising.

PORTLAND

This section has completely recovered from the storms of a few weeks ago and Christmas buying progressed favorably. While it is the consensus of opinion that the volume was good, it did not equal that of last year. General business, shipping, and bank clearings show a slight falling off over the figures of November, while building and industry are well sustained. The unemployment situation is a little worse than during the fall months with prospects of being still worse during January, when some of the logging camps will be inactive. Lumber production is running from 15 to 20 per cent below normal but prospects for considerable activity in this industry during the spring are very good. Electrical contractor-dealers report sales fair or good with contracting business active, particularly in residence work.

DENVER

Christmas buying got away with a late start with a result that better than 50 per cent of holiday sales in all lines were made during the six days preceding Christmas. Fairly gratifying results were secured by nearly all merchants but the condition which they experienced was a new one. Reduction in prices on most seasonable goods, especially novelties, together with reinforced advertising spreads, it is generally believed, saved the holiday business.

In electrical lines, unusual interest was expressed in laundry equipment and vacuum cleaners. Extensive sales, compared to similar periods the last six months, were reported by nearly all dealers and most of these were for Christmas delivery. Small appliances of standard makes were more in demand than cut-price products. Lots of shopping was done with careful regard for prices which shows, according to local commercial analysis, that even more careful buying will be done in 1922 and that nothing but good salesmanship will produce.

Building is improving and the outlook for the following sixty days indicates a substantial employment increase among local craftsmen. There is virtually no demand for agricultural workers. The closing of the beet sugar season will soon release a considerable number.

LOS ANGELES

New building records for industrial establishments continue to show a falling off, when compared to last year. Dwellings maintain increases sufficient to establish new totals far in excess of 1920. Permits for the first half of December totaled above $5,000,000. Bank clearings for the week ending Dec. 15th ran $2,470,000 ahead of the corresponding period last year, recording a total of $94,625,000 for the week. In the face of great reductions in farm commodities and metal products this is considered a remarkable showing.

Rainfall which overtops the records of the previous five years, comes as a relief to the agricultural sections and will contribute to the replenishing of underground sources and start the cover crops in the stockfeeding sections where the situation was critical.

Retail trade for the holidays was a general disappointment. Rainy days during the week preceding Christmas were held responsible for contributing to the buying delinquency of the public.

Construction News and Industrial Developments

Suggesting to the Engineer, Contractor, Manufacturer, Dealer, Agent and All Business Men Opportunities for New Business

THE PACIFIC NORTHWEST

REEDSPORT, ORE.—The Reedsport Light & Power Company has petitioned to be declared insolvent, it is reported.

KALAMA, WASH.—At a recent election here a $55,000 bond issue was voted for improvements for the Kalama port.

SEATTLE, WASH.—The Northwestern Supply Co., incorporated at $50,000, recently applied for a change of name to the Tri-State Electric Co.

SPOKANE, WASH.—It is reported that the Great Northern Icing Co. will erect a modern ice manufacturing plant here at a cost of about $100,000.

PORTLAND, ORE.—More than $50,000 will be spent for bridge repair work within the jurisdiction of the city in 1922, according to O. Laurgaard, city engineer.

SPOKANE, WASH.—It is reported that the Great Northern Railway is planning to double track 35 miles of road between Wenatchee and Harrington at a cost of approximately $700,000.

HOOD RIVER, ORE.—It is reported that the Oregon Lumber Co. is contemplating the construction of a large dam just below the Punch Bowl in Hood river for the purpose of developing electric power.

SEATTLE, WASH.—The Miller River bridge in the Skykomish Valley near Berlin has dropped into the river. It is expected that the bridge, which is a 120-ft. span, can be put in place again on new piers.

CANBY, ORE.—The city of Canby has been granted a permit to appropriate 300 sec.-ft. of water from Mill Creek for the development of power. The construction of a municipal light and power system is contemplated.

OLYMPIA, WASH.—The Federal Iron and Steel Corporation, F. M. Handy, J. C. Haas, A. M. Baldwin, Louis Moss and A. H. Stedman, incorporators, recently filed application for incorporation; capital stock $1,000,000.

EDMONDS, WASH.—The Rainbow Shingle Co. was recently incorporated with a capital stock of $15,000 by C. L. Miller, Edmonds. The incorporators are M. C. Engles, Wm. M. Arrowwood, C. L. Wiester and E. A. Roe.

COTTAGE GROVE, ORE.—Reductions in the cost of lighting, heating and power service furnished by the Cottage Grove Electric Company have been ordered by the public service commission of Oregon, effective December 20.

OLYMPIA, WASH.—The Edwards Drilling Corporation, Spokane, has filed articles of incorporation, with a capital stock of $100,000; incorporators, W. W. Edwards, Alfred L'Ecuyer, C. J. Galloway, H. L. McWilliams and C. L. Bean.

SALEM, ORE.—The development of 3409 hp. of electric energy for municipal use is proposed in an application for permission to appropriate water from the Malheur river filed with the state engineer by J. Edwin Johnson of Vale, Oregon.

REEDSPORT, ORE.—The Three Rivers Light and Power Company of this city has recently been incorporated for $50,000, by Stanley D. Chapin, J. R. Browne and J. G. Napier. It is the expectation of the new company to use the distributing system of the old light plant and to install two Diesel engines for operating generators to supply light and power to the city.

SALEM, ORE.—The East Boswell Mines, Inc., has filed articles of incorporation. The company has a capital stock of $150,000 and will engage in mining and milling operations. F. A. Fritz, M. Norden, J. M. Scudder, of Portland, are the incorporators.

PORTLAND, ORE.—Following the passage of the special city tax levy for the 1925 exposition, L. Q. Sweatland announced his intention to build within the next year a 12-story, 220-room hotel in the down town district at an estimated cost of $750,000.

RAINIER, ORE.—The Columbia Wood Products Company, a recently organized corporation with a capital stock of $250,000, has purchased a site in this city and will begin the erection of the first unit of their plant for manufacturing wood products at once.

SALEM, ORE.—The Willamette Valley Flax & Hemp Corporation, H. E. Bradley, D. F. Eastburn and E. L. Porter, Salem, incorporators, has filed articles of incorporation, capital stock $100,000. The company will process and manufacture hemp and other products of flax.

SALEM, ORE.—Extension to its municipal water supply at a cost of $22,500 is contemplated by the town of Myrtle Point, Ore., according to an application for the appropriation of water filed with the state engineer. A reservoir and pipe line are included in the project.

TOLEDO, ORE.—The Pacific Spruce Corporation, it is announced, will shortly open up the big spruce mill purchased from the government. A box factory and planing mill will be built to supplement the government mill which was used during the war to cut airplane stock.

PORTLAND, ORE.—The Columbia Tire Corporation will begin construction immediately on its new tire factory in the North Portland industrial district on a site just purchased. The plant will be electrically operated throughout and will have an installed motor capacity of approximately 600 hp.

SALEM, ORE.—The water board of Eugene has filed application with the state engineer for the appropriation of an additional 400 sec.-ft. of water from the McKenzie river with which to increase the capacity of its present power plant and for the appropriation of an additional 2500 sec.-ft. of water for a new power plant.

BREMERTON, WASH.—Reports of the Navy Department indicate that plans and specifications for the Bremerton seawall and dock are from 80 to 90 per cent complete. The work involves the expenditure of about $1,100,000, of which $100,000 will be spent in grading. The cost of the pier is estimated at $750,000.

SEATTLE, WASH. — The Intercity-Marine Wireless Electric Co., Inc., has filed articles of incorporation, capital stock $100,000; incorporators, John C. Mitchell, Wm. Wing and Geoffrey H. Lloyd. The company proposes to construct, manufacture, repair, import and export all kinds of electrical and radio apparatus and appliances.

PORTLAND, ORE.—The city council is negotiating a lease of a 20-acre tract with more than 800-ft. water frontage to the Prouty Lumber & Box Co. The lease is to run 50 years and the company agrees to immediately erect a sawmill and box factory on the site and to keep it or some similar industry in operation continuously during the life of the lease. The sawmill will have a capacity for 100,000 ft. daily output and the proposed plant, including the box factory, would cost approximately $150,000, giving employment to about 200.

McMINNVILLE, ORE.—The city of McMinnville has been granted a permit to construct an impounding reservoir to store 5900 acre-ft. of water from Nestucca river and Walker creek and to appropriate 35 sec.-ft. from this reservoir for the development of power for municipal use. The project contemplates the development of 5979 hp. under a head of 1460 ft.; impulse wheels and electric generators to be utilized; development in two units; pipe line 5 miles long. Total cost of project is estimated at $250,000.

THE INTERMOUNTAIN DISTRICT

DENVER, COLO.—P. J. Sullivan and Alex Simpson have started work on the superstructure of the first unit of the million-dollar Presbyterian hospital.

FORT MORGAN, COLO.—A new ice plant and cold storage warehouse is being constructed here by Thomas C. Ekrem and Charles W. Bessee of the Denver Ice and Cold Storage Co.

DENVER, COLO.—The Beatrice Creamery Company is working on plans for the complete electrification of its plant in this city. Engineers estimate that a 900-horsepower load will be necessary.

LOGAN, UTAH.—Bonds in the sum of $375,000 for the conservation of water in Cache county district No. 1 were voted on December 12th in Petersboro and Cache Junction at a bond election.

OGDEN, UTAH.—A building permit has been issued to the Taylor Building Company for the erection of an 88-room apartment house on the northwest corner of Twenty-seventh street and Hudson avenue. The building will cost $60,000.

DENVER, COLO.—Another modern store building will be erected immediately in the uptown district by the Powers-Behen Company, one of the large clothing and men's furnishing establishments. According to George Williamson, the architect, the cost is estimated at $60,000.

DENVER, COLO.—A completely equipped electric smelter, to be the largest in Colorado, will be built in this city shortly by the Utah-Colorado Mining and Milling Company, according to Charles E. Havener, the president. It will be electrically equipped throughout and will cost about $10,000,000 when completed, the engineers of the company announce.

THE PACIFIC CENTRAL DISTRICT

OAKLAND, CAL.—The Producers Milk Co., has filed articles of incorporation, capital stock $250,000. The directors are W. Hotchkiss, J. Costa and E. Hirsh.

HAYWARD, CAL.—The city trustees have decided on an electrolier lighting system for the entire city at an estimated cost of $60,000.

RICHMOND, CAL.—Additions to the plant of the Pacific Sanitary Mfg. Co. have been announced by J. D. Cameron. The improvements will cost approximately $60,000.

SACRAMENTO, CAL.—Reclamation District No. 2022 has made application to the State Reclamation Board for the approval of plans for the remodeling of pumping plants, construction of ditches and various other work incidental to irrigation, to cost approximately $21,000.

SACRAMENTO, CAL.— Plans have been drawn for a new ice and cold storage plant to be erected at 30th and S Streets, Sacramento, for a company headed by A. B. Atkinson, of the Oak Park Lumber Co. The plant will cost about $75,000.

MARTINEZ, CAL.—The Union Oil Co., of California has purchased 36½ acres of land adjoining its present holdings and it is understood that the property will be used for the construction of additional tanks.

LODI, CAL.—Articles of incorporation have been filed by the Industrial Manufacturing Co. The company intends to establish a pumping machinery plant and is capitalized at $200,000. The directors follow: Dean H. Thompson, H. Stark and Wm. C. Allen, Lodi, John F. Gormley and Lee Jones, Stockton.

MERCED, CAL.—A. B. Ruddle and associates have taken over the Leigh Ingalsbe place of 520 acres in the northern part of the Merced Irrigation district. Pumping plants and reservoirs will be placed on these ranches and they will be planted and subdivided.

HILMAR, CAL.—The Hilmar Preserving Company will incorporate for $100,000 in order to increase their capacity in the coming season.

SAN FRANCISCO, CAL.—The Adam Arras Co., 185 Stevenson St., has been awarded a contract for the construction of a two-story concrete building to be erected on the north side of Folsom St., for the Bothin Real Estate Co. The building will be used for an electrical supply shop.

SAN FRANCISCO, CAL.—Sealed bids will be received until 3 p. m., Jan. 4, for steel rails, joints and track materials for the municipal railway system. (Contract No. 127.)

SAN MATEO, CAL.—The Doble Motors Corp., manufacturers of the Doble (steam) automobile, has conferred with the Three Cities Chamber of Commerce with regard to the cost of a plant in Burlingame, east of the Southern Pacific Co. right-of-way, near Easton. A $300,000 plant is contemplated, according to G. H. Landfield.

SUSANVILLE, CAL.—A cyanide plant is to be installed at the Osterbloom quartz mine, located in the Milford mineral zone, according to announcement recently made by A. J. Osterbloom.

SAN FRANCISCO, CAL.—Contract for the construction of a one-story reinforced concrete addition to the ice plant of the Pacific Express Co., at Calwa, Cal., has been awarded to D. Wagner, Call Building. The plant, which will be completed in four months, will cost $85,000.

PLANADA, CAL.—The N. E. Beckwith Company has purchased a site and signed a contract eo erect a modern preserving plant here. The California Packing Corp. will also build a cannery.

SACRAMENTO, CAL.—At an election held Dec. 21 a favorable vote was cast for a bond issue of $900,000 to complete the new filtration plant, also for $200,000 for waterfront development.

MADERA, CAL.—E. Y. Foley is contemplating the erection of a brick packing house to cover an entire block. The location has not yet been determined.

MADERA, CAL.—The Madera and Medano Irrigation Districts have joined their interests in the development of the waters of the Chowchilla River. Thos. Means, engineer, states that the Buchanan dam will impound 50,000 acre-ft. The first block of the bonds has been sold and the plans for the entire project will be ready in the near future.

FRESNO, CAL.—W. P. Fuller and Company are contemplating the erection of a building for the paint and glass business of the company in this territory. Architect Eugene Mathewson is preparing the plans.

FRESNO, CAL.—The greatest single project of an industrial nature to enter this locality is the Sugar Pine Lumber Company now beginning the erection of a mill in the city. The tract of land to be improved with buildings and machinery is 500 acres. A 40-mile railroad is to be constructed back into the timber holdings in the Sierras. Approximately $5,000,000 will be expended in the entire development.

THE PACIFIC SOUTHWEST

LONG BEACH, CAL.—The Utah Fuel and Iron Co., will erect a factory in the local harbor in February.

UPLANDS, CAL.—Old Baldy Citrus Association will erect a lemon packing house to cost $100,000.

SAN PEDRO, CAL.—Two new units will be added to the San Pedro High School building at a cost of $118,000.

HIGHLAND PARK, CAL.—A three-story and basement school building will be erected at Eagle Rock and 62nd Ave.

AZUZA, CAL.—Plans are nearly completed for the Citrus Union high school building and bids will be called for in a few weeks.

LOS ANGELES, CAL.—The Kroyer Motors Co., a $5,000,000 Stockton concern, is planning on building a plant in Los Angeles in 1922.

LOS ANGELES, CAL.—A Mormon Temple to cost $500,000 will be erected at Ocean Park Heights on land donated by Harry Culver Co. of Los Angeles.

ANAHEIM, CAL.—The plans for the new $75,000 city hall are being drawn by architects T. C. Kistner of San Diego and M. Eugene Durfee of this city, associated.

LONG BEACH, CAL.—The Kimball Motors Co., through O. C. Hull, vice-president, has announced that a factory will be built upon a site purchased north of Willowville

SAN BERNARDINO, CAL.—H. S. Williamson, district manager for the Southern California Edison Co., will install buildings and new substations here to cost $200,000.

SANTA FE, N. M.—Chas. Clay, owner of the Hotel Clay at Jemez Springs, will erect a $50,000 pueblo style hotel building below Soda Dam. John D. Hughes is the architect.

BURBANK, CAL.—The Western Glass Products Co., will erect a factory here in the near future, to be located adjoining the American Aluminum Co., and Empire China Factory.

LONG BEACH, CAL.—A church building to cost $75,000 will be erected by the Methodist Episcopal church at Miramar, Terminal & Eliot Sts. John Parkinson is architect for the building.

LOS ANGELES, CAL.—A two-story brick factory building will be erected at 713-17 S. Flower St., by Charles W. Bean, contractor, to cost $40,262. The owners are the C. C. Brown Candy Co.

BLYTHE, CAL.—A total of $200,000 in bonds will be sold by the Palo Verde Drainage District to develop the drainage system. The work is to be carried on as rapidly as material can be supplied.

SAN PEDRO, CAL.—A 5-story hotel to cost $150,000 is to be erected at Sixth Street and Pacific Avenue, by Phillip M. Stone of Pasadena. The plans will be ready for inspection in a few days.

SAN PEDRO, CAL.—A large addition to the transit shed facilities will be built at once, according to plans announced by the Harbor Board. The new shed will be erected on Terminal Island. It will occupy a ground space of 109 by 600 ft. The cost is estimated at $215,000.

LOS ANGELES, CAL.—A 10-story loft building is to be erected at 932 So. Broadway by A. B. Cohn. Weeks and Day are the architects and the leases are being handled by A. C. Blumenthal and Company.

HERMOSA BEACH, CAL.—It is rumored that the Chamber of Commerce has under consideration an offer by outside parties to erect a $250,000 hotel in this city if the ground is provided by local authorities.

LOS ANGELES, CAL.—Morgan, Wells & Morgan, architects, have been commissioned to prepare plans for a 12-story Class A bank and office building to be erected by the Bank of Italy, northwest corner of Seventh and Olive Streets.

RIVERSIDE, CAL.—The Monta Vista Citrus Association, through its manager, has announced that a $30,000 lemon packing house will be built at 3rd and Vine Streets. The contract was awarded to the Cresmer Mfg. Co.

HOLLYWOOD, CAL.—Holbrook & Ingalls are the architects for a two-story, 10-room Class C school building to be erected in the Logan district. Provision is also made for an auditorium. The cost is estimated at $76,000.

SAN DIEGO, CAL.—Plans for the new post exchange and dispensary building at the Marine base are ready. The structures are to be thoroughly fire-proof. No estimate of the cost is available. The date for bids has not been announced.

HUNTINGTON PARK, CAL.—The rapid increase in the demand for water forces the city to make provisions at once for additional capacity. Approximately $75,000 will be expended in new wells, pumps, and mains to relieve the situation at an early date.

LONG BEACH, CAL.—According to the announcement of Col. Charles R. Drake, president, the Long Beach Bath House and Amusement Company will start at once with the erection of a 6-story office building and theater which will cost $600,000 when completed.

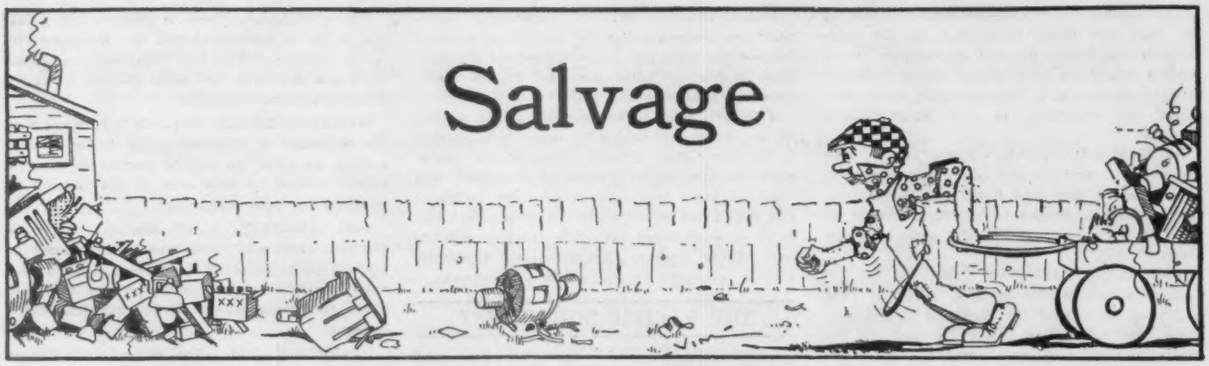
OXNARD, CAL.—The sum of $290,000 will be expended by the Las Posas Water Company and two mutual districts yet to be organized. It is proposed to develop 500 miner's inches and use this water on 4,000 acres not now supplied with sufficient irrigation facilities.

AZUSA, CAL.—Anticipating the continued growth in the consumption of gas in the district in and around this city, the Southern Counties Gas Company of California is erecting a new 100,000 cu. ft. gas holder here. The engineers in charge of construction for Baker Iron Works believe that all work will be completed by February 1st.

LOS ANGELES, CAL.—Two reinforced concrete warehouses, each one to be 4 stories and basement, will be built in the north part of the city near the railroad yards. Architects Parkinson and Parkinson give the cost of these structures as estimated at $1,500,000. The plans will be ready the first of the year.

LONG BEACH, CAL.—George W. McIntyre and C. E. McIntyre are having plans prepared for a 12-story hotel to be located on Ocean Boulevard near American Avenue. It will be operated in connection with the Long Beach Auto Tours System also owned by the McIntyre interests. Harvey H. Lochridge is preparing the plans.

SAN PEDRO, CAL.—It is announced that the syndicate headed by E. G. Lewis of Atascadero, Cal., will make the regents of the University of California, Southern Branch, an offer of $1,000,000 and 1,000 acres in the event that the University is moved to the Palos Verdes Ranch property which the syndicate is about to open. This property will be developed along exceptional lines. The sum of $35,000,000 is said to be the figure named by the Board of Engineers as the amount necessary. H. T. Cory heads the board as chief engineer.



Mottoes for the Wife Saving Station

We have long admired the chiropodist who attracts the passing trade with the quotation, "Hell hath no fury like a woman's corn."

Several equally brilliant suggestions are now available for the electrical contractor-dealer who affects a literary bent. From the East comes the following suggestions for vacuum cleaner advertising:

"Sweep no more my lady, sweep no more today."

Or, paraphrasing Burns—

"Man's inhumanity to woman makes countless thousands sweep."

For the electric washing machine, Tennyson offers a happy thought:

"Wring out the old, wring in the new."

Or why not this suggestion from a Butte paper?—

"The steps I took with thee, old broom,
Are as a swirl of dust to me;
I count them over as I cross the room—
My rotary (action, ball bearing suction sweeper),
My rotary."

* * *

How to Grow Rich

The following practical method of household accounting is offered for the use of the enterprising contractor-dealer and small business man by H. W. Davis as one of his "Pomes and Sunflowers." We suggest only that the last line be changed to read "Profit." Otherwise the system is ideal.

Rent	$30.00
Groceries	42.87
Shoes (1 pair)	14.00
Suit (man)	35.00
Coat (wife)	85.00
Hat (wife)	21.99
Gas and electricity	8.22
Coal	15.00
Payment on Victrola	10.00
Payment on gas range	3.00
Car fare	4.00
Movies	10.00
Church	.40
Tobacco	.65
Total	$280.13
Salary $100.00	
Note 200.00	
Total	$300.00
Balance	$ 19.87

* * *

What Methusaleh Missed

It has been calculated that if there had been an electric utility company in Methusaleh's home town and if he had invested $1.00 in securities at 6 per cent interest when he was 21 years of age and had reinvested his earnings annually, his wealth would have amounted to $977,157,910,641,000,000,000,000.04 at the age of 969, when he died.

And it is further estimated that if it had passed on to father and son from that time to this, under the excess profits and inheritance tax now in vogue, Solomon Methuselah, who now owns a second-hand store on the corner of Center and Fifth, would have received $1.04 as his share, of which all but the four cents would be owing to the government.

* * *

From Our Chinese Correspondent. — The Hongkong and Shanghai Bank of Peking is ornamented with a large square clock tower, displaying four clock faces, no two of which are ever known to show the same time. In lighter Peking circles this is known as "the bank where the wild time grows."

* * *

ELECTRICAL HYBRIDS

XVIII — The Electric Bell Hop

Electric Bell hops will respond
Whenever you may ring.
Of buttons they are very fond
And tips and everything.

When pressed for service they rebel
And strike repeatedly—
Just touch their buttons and they yell
A charge of battery.